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NEWS 6 DEC 14 CA/Caplus to be enhanced with updated IPC codes
NEWS 7 DEC 21 IPC search and display fields enhanced in CA/Caplus with the
IPC reform
NEWS 8 DEC 23 New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/
USPAT2
NEWS 9 JAN 13 IPC 8 searching in IFIPAT, IFIUDB, and IFICDB
NEWS 10 JAN 13 New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to
INPADOC
NEWS 11 JAN 17 Pre-1988 INPI data added to MARPAT
NEWS 12 JAN 17 IPC 8 in the MPI family of databases including WPIFV

NEWS EXPRESS JANUARY 03 CURRENT VERSION FOR WINDOWS IS V8.01,
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
AND CURRENT DISCOVER FILE IS DATED 19 DECEMBER 2005.
V8.0 USERS CAN OBTAIN THE UPGRADE TO V8.01 AT
<http://download.cas.org/express/v8.0-Discover/>

NEWS HOURS STN Operating Hours Plus Help Desk Availability
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***** STN Columbus *****

FILE 'HOME' ENTERED AT 07:35:34 ON 26 JAN 2006

=> file reg
COST IN U.S. DOLLARS SINCE FILE TOTAL

(IRON(W)MANGANESE(W)SILVER(W)NICKEL(W)COPPER(W)GOLD)

=> s iron and silver
562158 IRON
59691 SILVER
L5 1223 IRON AND SILVER

=> s transition and metal
168 TRANSITION
12303 METAL
L6 1 TRANSITION AND METAL

=> s 15 and 11
L7 0 L5 AND L1

=> s 15 and PEI
65 PEI
L8 0 L5 AND PEI

=> s 15 and polydentate
0 POLYDENTATE
L9 0 L5 AND POLYDENTATE

=> s 15 and polyamine
455 POLYAMINE
L10 0 L5 AND POLYAMINE

=> file hcaplus uspatfull
COST IN U.S. DOLLARS SINCE FILE TOTAL
FULL ESTIMATED COST ENTRY SESSION
77.92 78.13

FILE 'HCAPLUS' ENTERED AT 07:38:06 ON 26 JAN 2006
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FILE 'USPATFULL' ENTERED AT 07:38:06 ON 26 JAN 2006
CA INDEXING COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

=> s transition and metal
L11 393019 TRANSITION AND METAL

=> s polyethyleneimine or PEI
L12 21969 POLYETHYLENEIMINE OR PEI

=> s 111 and 112
L13 2850 L11 AND L12

=> s 113 and odor or deodorizing or deodorizing
L14 11922 L13 AND ODOR OR DEODORIZING OR DEODORIZING

=> s 113 and odor
L15 282 L13 AND ODOR

=> d 115 and epichlorohydrin
'AND' IS NOT A VALID FORMAT
'EPICHLOROHYDRIN' IS NOT A VALID FORMAT

In a multifile environment, a format can only be used if it is valid
in at least one of the files. Refer to file specific help messages

FULL ESTIMATED COST ENTRY SESSION
0.21 0.21

FILE 'REGISTRY' ENTERED AT 07:35:45 ON 26 JAN 2006
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STRUCTURE FILE UPDATES: 24 JAN 2006 HIGHEST RN 872575-89-8
DICTIONARY FILE UPDATES: 24 JAN 2006 HIGHEST RN 872575-89-8

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *

Structure search iteration limits have been increased. See HELP SLIMITS
for details.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/egprops.html>

=> s polyethyleneimine
L1 14 POLYETHYLENEIMINE

=> s transition metal
168 TRANSITION
12303 METAL
L2 1 TRANSITION METAL
(TRANSITION(W)METAL)

=> s 11 and 12
L3 0 L1 AND L2

=> s iron manganese silver nickel copper gold
562158 IRON
162121 MANGANESE
59691 SILVER
326982 NICKEL
321828 COPPER
40265 GOLD
L4 0 IRON MANGANESE SILVER NICKEL COPPER GOLD

or the STNGUIDE file for information on formats available in
individual files.
REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):end

=> s 115 and epichlorohydrin
L16 127 L15 AND EPICHLOROHYDRIN

=> dup rem 116
PROCESSING COMPLETED FOR L16
L17 126 DUP REM L16 (1 DUPLICATE REMOVED)

=> s 17 and polydentate
L18 1147 17 AND POLYDENTATE

=> s 117 and polydentate
L19 1 L17 AND POLYDENTATE

=> d 119 ibib kwic

L19 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:348809 HCAPLUS Full-text
DOCUMENT NUMBER: 142:378939
TITLE: Method for reducing odor using coordinated
polydentate compounds
INVENTOR(S): Wu, Bin; McGrath, Kevin P.; Kim, Jaeho; Do, Bao Trong;
Greene, Sharon Linda; Huang, Yanbin; Yang, Kaiyuan
PATENT ASSIGNEE(S): Kimberly-Clark Corporation, USA
SOURCE: U.S. Pat. Appl. Publ., 14 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005084474	A1	20050421	US 2003-686937	20031016
WO 2005039661	A1	20050506	WO 2004-US11596	20040414
M: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SI, SE, TG, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: US 2003-686937 A 20031016
TI Method for reducing odor using coordinated polydentate
compounds

AB A method for reducing odor is provided. The method comprises forming a
coordination complex between a transition metal and a polydentate compound,
and contacting the coordinated complex with an odorous compound. The
transition metal provides one or more active sites for capturing the odorous
compound. In some embodiments, the polydentate compound may be a
polyalkylamine, such as polyethyleneimine, polypropyleneimine, or a dendrimer
thereof. A polyethyleneimine solution was initially prepared by dissolving
3.3 g of branched polyethyleneimine in 900 mL of deionized water. Thereafter,

335 mg of copper chloride was added to the polyethyleneimine solution. Upon addition of copper chloride, the solution turned deep blue, indicating the formation of a coordination complex. A piece of a Scott paper towel was then immersed in the solution for 1 min and allowed to dry in air. The solids addition level was 5.8%. The product was tested for odor adsorption using 1 µL of Et mercaptan (0.839 mg). The % odor reduction was determined to be 85.4%. In a parallel test, a control sample (piece of untreated Scott paper towel) reduced only 11.0% odor.

ST odor redn coordinated polydentate complex
transition metal; deodorant polyethyleneimine
copper chloride

IT Fibers
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(cellulosic; method for reducing odor using coordinated polydentate compds.)

IT Transition metals, biological studies
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(coordination complexes with polyalkylamines; method for reducing odor using coordinated polydentate compds.)

IT Epoxy resins, biological studies
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(coordination complexes with transition metals; method for reducing odor using coordinated polydentate compds.)

IT Deodorants
Nonwoven fabrics
Odor and Odorous substances
Paper
Particle size
Particles
Textiles
(method for reducing odor using coordinated polydentate compds.)

IT Coordination compounds
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(method for reducing odor using coordinated polydentate compds.)

IT Aldehydes, uses
Amines, uses
Carboxylic acids, uses
Ketones, uses
Sulfides, uses
Terpenes, uses
Thiols, uses
RL: NUU (Other use, unclassified); USES (Uses)
(method for reducing odor using coordinated polydentate compds.)

IT Ligands
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(multidentate, coordination complexes with transition metals; method for reducing odor using coordinated polydentate compds.)

IT Zeta potential
(neg.; method for reducing odor using coordinated polydentate compds.)

IT Aldehydes, biological studies

=> d his full

(FILE 'HOME' ENTERED AT 07:35:34 ON 26 JAN 2006)

FILE 'REGISTRY' ENTERED AT 07:35:45 ON 26 JAN 2006

L1	14	SEA POLYETHYLENEIMINE
L2	1	SEA TRANSITION METAL
L3	0	SEA L1 AND L2
L4	0	SEA IRON MANGANESE SILVER NICKEL COPPER GOLD
L5	1223	SEA IRON AND SILVER
L6	1	SEA TRANSITION AND METAL
L7	0	SEA L5 AND L1
L8	0	SEA L5 AND PEI
L9	0	SEA L5 AND POLYDENTATE
L10	0	SEA L5 AND POLYAMINE

FILE 'HCAPLUS, USPATFULL' ENTERED AT 07:38:06 ON 26 JAN 2006

L11	393019	SEA TRANSITION AND METAL
L12	21969	SEA POLYETHYLENEIMINE OR PEI
L13	2850	SEA L11 AND L12
L14	11922	SEA L13 AND ODOR OR DEODORISING OR DEODORIZING
L15	282	SEA L13 AND ODOR
L16	127	SEA L15 AND EPICHLOROHYDRIN
L17	126	DUP REM L16 (1 DUPLICATE REMOVED)
L18	1147	SEA L17 AND POLYDENTATE
L19	1	SEA L17 AND POLYDENTATE
	D L19	IBIB KWIC

FILE HOME

FILE REGISTRY
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STRUCTURE FILE UPDATES: 24 JAN 2006 HIGHEST RN 872575-89-8
DICTIONARY FILE UPDATES: 24 JAN 2006 HIGHEST RN 872575-89-8

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TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

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*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added. *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information

RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(polyfunctional, coordination complexes with transition metals; method for reducing odor using coordinated polydentate compds.)

IT Imines
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(polyamines, alkyl derivs., coordination complexes with transition metals; method for reducing odor using coordinated polydentate compds.)

IT Ligands
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(pos. charged, coordination complexes with polyalkylamines; method for reducing odor using coordinated polydentate compds.)

IT 1344-28-1, Alumina, biological studies 7631-86-9, Silica, biological studies
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(method for reducing odor using coordinated polydentate compds.)

IT 75-13-8DP, Isocyanic acid, esters, polymers, coordination complexes with transition metals 106-89-8DP, Epichlorohydrin, coordination complexes with transition metals 1344-67-8DP, Copper chloride, coordination complexes with polyalkylamines 7439-89-6DP, Iron, coordination complexes with polyalkylamines 7439-96-5DP, Manganese, coordination complexes with polyalkylamines 7440-02-0DP, Nickel, coordination complexes with polyalkylamines 7440-20-2DP, Scandium, coordination complexes with polydentate compd 7440-22-4DP, Silver, coordination complexes with polyalkylamines 7440-32-6DP, Titanium, coordination complexes with polyalkylamines 7440-47-3DP, Chromium, coordination complexes with polyalkylamines 7440-48-4DP, Cobalt, coordination complexes with polyalkylamines 7440-50-8DP, Copper, coordination complexes with polyalkylamines 7440-57-5DP, Gold, coordination complexes with polyalkylamines 7440-62-2DP, Vanadium, coordination complexes with polyalkylamines 7440-66-6DP, Zinc, coordination complexes with polyalkylamines 7705-08-0DP, Ferric chloride, coordination complexes with polydentate compd 7733-02-0DP, Zinc sulfate, coordination complexes with polydentate compd 9002-98-6DP, coordination complexes with transition metals 22199-08-2DP, Silver sulfadiazine, coordination complexes with polydentate compd 25037-42-7DP, Polypropyleneimine, coordination complexes with transition metals 26913-06-4DP, Poly[imino(1,2-ethanediy)], coordination complexes with transition metals 32290-92-9DP, Polypropyleneimine, coordination complexes with transition metals

RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(method for reducing odor using coordinated polydentate compds.)

IT 110-86-1, Pyridine, uses 111-71-7, Heptanal 7664-41-7, Ammonia, uses 25917-35-5, Hexanol
RL: NUU (Other use, unclassified); USES (Uses)
(method for reducing odor using coordinated polydentate compds.)

=>

on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

FILE HCAPLUS

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FILE COVERS 1907 - 26 Jan 2006 VOL 144 ISS 5
FILE LAST UPDATED: 29 Jan 2006 (20060125/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE USPATFULL
FILE COVERS 1971 TO PATENT PUBLICATION DATE: 24 Jan 2006 (20060124/PD)
FILE LAST UPDATED: 24 Jan 2006 (20060124/ED)
HIGHEST GRANTED PATENT NUMBER: US6990685
HIGHEST APPLICATION PUBLICATION NUMBER: US2006015978
CA INDEXING IS CURRENT THROUGH 24 Jan 2006 (20060124/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 24 Jan 2006 (20060124/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2005

=> s l17 and (method or process)
L20 126 L17 AND (METHOD OR PROCESS)

=> s l20 and crosslinking
L21 71 L20 AND CROSSLINKING

=> s l21 and (fabric or paper or cellulose or fiber)
L22 70 L21 AND (FABRIC OR PAPER OR CELLULOSE OR FIBER)

=> dup rem l22
PROCESSING COMPLETED FOR L22
L23 70 DUP REM L22 (0 DUPLICATES REMOVED)

=> d l23 1-10 ibib kwic
'L-10' IS NOT A VALID FORMAT FOR FILE 'USPATFULL'

The following are valid formats:

The default display format is STD.

ABS ----- AB
ALL ----- AN, TI, IN, INA, PA, PAA, PAT, PI, AI, PTERM, DCD, RLI, PRAI, DT, FS, REP, REN, EXNAM, LREP, CLMN, ECL, DRWN, AB, GOVI, PARN, SUMM, DRWD, DETD, CLM, INCL, INCLM, INCLS, NCL, NCLM, NCLS, IC, IPCI,

IPCI-2, IPCR, EXF, ARTU
 ALLG ----- ALL plus PAGE.DRAW
 BIB ----- AN, TI, IN, INA, PA, PAA, PAT, PI, AI, PTERM, DCD, RLI,
 PRAI, DT, FS, EXNAM, LREP, CLMN, ECL, DRWN, LN.CNT
 BIB.EX ----- BIB for original and latest publication
 BIBG ----- BIB plus PAGE.DRAW
 BROWSE ----- See "HELP BROWSE" or "HELP DISPLAY BROWSE". BROWSE must
 entered on the same line as DISPLAY, e.g., D BROWSE.
 OS, CC, SX, ST, IT
 CBIB ----- AN, TI, IN, INA, PA, PAA, PAT, PI, AI, PRAI, DT, FS
 DALL ----- ALL, delimited for post-processing
 FF ----- PI, TI, IN, INA, PA, PAA, PAT, PTERM, DCD, AI, RLI,
 PRAI, IC, IPCI, IPCI-2, IPCR, INCL, INCLM, INCLS, NCL,
 NCLM, NCLS, EXF, REP, REN, ARTU, EXNAM, LREP,
 CLMN, DRWN, AB
 FF.EX ----- FF for original and latest publication
 FPALL ----- PI, TI, IN, INA, PA, PAA, PAT, PTERM, DCD, AI,
 RLI, PRAI, IC, IPCI, IPCI-2, IPCR, INCL, INCLM, INCLS, NCL, NCLM,
 NCLS, EXF, REP, REN, ARTU, EXNAM, LREP, CLMN, DRWN, AB,
 PARN, SUMM, DRWD, DETD, CLM
 FFBIB ----- PI, TI, IN, INA, PA, PAA, PAT, PTERM, DCD, AI,
 RLI, PRAI, REP, REN, EXNAM, LREP, CLM, CLMN, DRWN
 FHITSTR ----- HIT RN, its text modification, its CA index name, and
 its structure diagram
 FPG ----- FF plus PAGE.DRAW
 GI ----- PN and page image numbers
 HIT ----- All fields containing hit terms
 HITRM ----- HIT RN and its text modification
 HITSTR ----- HIT RN, its text modification, its CA index name, and
 its structure diagram
 IABS ----- ABS, indented with text labels
 IALL ----- ALL, indented with text labels
 IALLG ----- IALL plus PAGE.DRAW
 IBIB ----- BIB, indented with text labels
 IBIB.EX ----- IBIB for original and latest publication
 IBIBG ----- IBIB plus PAGE.DRAW
 IMAX ----- MAX, indented with text labels
 IMAX.EX ----- IMAX for original and latest publication
 IND ----- INCL, INCLM, INCLS, NCL, NCLM, NCLS, IC, IPCI, IPCI-2, IPCR,
 EXF, ARTU, OS, CC, SX, ST, IT
 IPC.TAB ----- IPC in tabular format
 ISTD ----- STD, indented with text labels
 KWIC ----- All hit terms plus 20 words on either side
 MAX ----- AN, TI, IN, INA, PA, PAA, PAT, PI, AI, PTERM, DCD,
 RLI, PRAI, DT, FS, REP, REN, EXNAM, LREP, CLMN, ECL,
 DRWN, AB, GOVI, FARM, SUMM, DRWD, DETD, CLM, INCL,
 INCLM, INCLS, NCL, NCLM, NCLS, IC, IPCI, IPCI-2,
 IPCR, EXF, ARTU OS, CC, SX, ST, IT
 MAX.EX ----- MAX for original and latest publication
 OCC ----- List of display fields containing hit terms
 SBIB ----- AN, TI, IN, INA, PA, PAA, PAT, PI, AI, RLI, PRAI,
 DT, FS, LN.CNT
 STD ----- AN, TI, IN, INA, PA, PAA, PAT, PI, AI, RLI, PRAI,
 DT, FS, LN.CNT, INCL, INCLM, INCLS, NCL, NCLM, NCLS,
 IC, IPCI, IPCI-2, IPCR, EXF (STD is the default)
 STD.EX ----- STD for original and latest publication
 TRIAL ----- AN, TI, INCL, INCLM, INCLS, NCL, NCLM, NCLS, IC,
 IPCI, IPCI-2, IPCR
 SCAN ----- AN, TI, NCL, NCLM, NCLS, IC, IPCI, IPCI-2, IPCR(random display

without answer number. SCAN must be entered on the
 same line as DISPLAY, e.g., D SCAN)
 ENTER DISPLAY FORMAT (STD):end

=> d 123 1-10 ibib kwic

L23 ANSWER 1 OF 70 USPATFULL on STN
 ACCESSION NUMBER: 2006:2267 USPATFULL Full-text
 TITLE: Inkjet-recording ink composition and image-forming
 process
 INVENTOR(S): Fukushima, Yuuichi, Kanagawa, JAPAN
 PATENT ASSIGNEE(S): FUJI PHOTO FILM CO., LTD. (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2006001719	A1	20060105
APPLICATION INFO.:	US 2005-155579	A1	20050620 (11)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2004-194003	20040630
	JP 2004-194004	20040630
	JP 2004-210692	20040716

DOCUMENT TYPE: Utility
 FILE SEGMENT: APPLICATION
 LEGAL REPRESENTATIVE: TAIYO CORPORATION, 401 HOLLAND LANE, #407, ALEXANDRIA,
 VA, 22314, US
 NUMBER OF CLAIMS: 17
 EXEMPLARY CLAIM: 1
 LINE COUNT: 2450

TI Inkjet-recording ink composition and image-forming process
 SUMM The invention relates to an inkjet-recording ink composition and an
 image-forming process using the same, and in particular, to an
 inkjet-recording ink composition that polymerizes and hardens by
 irradiation with a visible to near-infrared visible light and an
 image-forming process using the same.
 SUMM In the inkjet-recording process, ink is ejected to conduct
 recording. Recently, inkjet printers utilizing the inkjet-recording
 process have been more widely used for printing on paper
 , film, cloth, or the like in offices as well as in general households,
 as the use of computers spreads. Inks. . . and solid ink are known as
 inkjet-recording inks. Among them, aqueous inks are preferable from the
 points of productivity, handling, odor, stability, and the
 like, and are used mainly.
 SUMM . . . are less resistant to water because the dye is soluble in
 water; when images are printed on a so-called plain paper with
 an aqueous ink, the printing quality of the resulting image often
 deteriorate significantly owing to bleeding; the aqueous inks are also
 poorer in light fastness; and when printing is conducted with an aqueous
 ink on a recording paper having an ink-receiving recording
 layer containing porous inorganic particles on its surface (hereinafter,
 referred to as "photographic quality paper"), the storability
 of the image often shortens markedly owing to the influence of oxidative
 gases (SO.sub.x, NO.sub.x, ozone, etc.).
 SUMM . . . The ink containing a pigment or a dye does not penetrate into
 the sheet when ejected onto a photographic quality paper, and
 that the pigment and the dye are separated easily from the surface when
 rubbed with a finger, i.e., thereby. . .
 SUMM . . . exposure to an oxidative gas or the like as, and insufficient
 in abrasion resistance upon printing on a photographic quality

paper. In addition, an ink superior in staining property and
 abrasion resistance has been proposed (see, e.g., JP-A No. 2001-123097).
 This. . .
 SUMM According to the invention, an image-forming process is also
 provided which uses the inkjet-recording ink composition and which can
 easily and inexpensively record an image especially superior. . .
 SUMM The invention also provides a method for producing an
 inkjet-recording ink composition, the method comprising
 emulsifying, in an aqueous medium, a solution including an ethylenic
 unsaturated monomer, a colorant, and a photopolymerization initiator
 containing.
 SUMM The invention further provides an image-forming process
 comprising recording an image on a record medium by using the above
 inkjet-recording ink composition and curing the recorded image. . .
 DETD . . . at 25° C. of 2.6×10.sup.-13
 [m.sup.3(STP).multidot.m/(s.multidot.m.sup.2.multidot.kPa)] or lower.
 Hereinafter, the inkjet-recording ink composition according to the
 invention and the image-forming process using the same will be
 described in detail.
 DETD . . . embodiment, a bifunctional monomer is used in combination with
 a monofunctional monomer, for the purposes of adjusting the viscosity
 and crosslinking density and of controlling the physical
 properties (strength, adhesiveness, etc.) of the post-curing
 composition.
 DETD The oxygen permeability coefficient can be determined at 25° C.
 by a known oxygen electrode method. Methods of determining the
 oxygen permeability coefficient of organic compounds are described in
 literature in detail, for example, in "Koubunshi. . . which is
 incorporated herein by reference. The oxygen permeability coefficients
 specified in the invention are obtained by the oxygen electrode
 method which can measure the oxygen permeability coefficient of
 a fluid oily substance. The oxygen permeability coefficient [unit:
 m.sup.3(STP).multidot.m/(s.multidot.m.sup.2.multidot.kPa)] is
 determined. . .
 DETD . . . the penetration efficiency of ink into a record medium, when
 the ink composition is prepared, for example, by the emulsification
 method described below, the monomer content in the colored
 particle is preferably 25 wt % to 90 wt %, more preferably. . .
 DETD --NH-- or C(R.sup.11).dbd.; Zb and Zc each independently
 represent --N.dbd. or C(R.sup.11).dbd.; and R.sup.11 represents a
 hydrogen atom or a non-metal substituent. #STR4##
 DETD . . . --NH-- or --C(R.sup.11).dbd., and Zb and Zc each
 independently represent --N.dbd. or --C(R.sup.11).dbd..
 R.sup.11 represents a hydrogen atom or a non-metal substituent.
 When R.sup.11 represents a non-metal substituent, the non-
 metal substituent is preferably a cyano group, a cycloalkyl
 group, an aralkyl group, an aryl group, an alkylthio group, an arylthio.
 DETD . . . initiators include acetophenone derivatives, benzophenone
 derivatives, benzyl derivatives, benzoin derivatives, benzoin ether
 derivatives, benzyldialkylketal derivatives, thioxanthone derivatives,
 acylphosphine oxide derivatives, metal complexes,
 p-dialkylaminobenzoic acid, azo compounds, and peroxide compounds.
 Preferable examples thereof include acetophenone derivatives, benzyl
 derivatives, benzoin ether derivatives, benzyldialkylketal.
 DETD . . . may form a boron-containing heterocyclic ring by combining
 with each other directly or via a substituent. X represents an alkali
 metal, quaternary ammonium, pyridinium, quinolinium, diazonium,
 morpholinium, tetrazolinium, acrydinium, phosphonium, sulfonium,
 oxosulfonium, iodonium, S, P, Cu, Ag, Hg, Pd, Fe, Co. . .

DETD . . . composition according to the invention may include an organic
 solvent, for example when colored particles are prepared by the
 emulsification method to be described below. For example, in
 an example of the preparation of an ink composition by dispersing
 colored particles. . .
 DETD . . . of the stability of the dispersion and of health and safety.
 The organic solvent may be removed by a known method suitable
 for the type of the organic solvent, and examples thereof include
 evaporation, vacuum evaporation, and ultrafiltration. If emulsification
 is. . .
 DETD The method of preparing the inkjet-recording ink composition
 according to the invention will be described below.
 DETD . . . in which such lipophilic components are dispersed in an
 aqueous medium. The aqueous ink composition may be prepared by a
 method (emulsification method) of emulsifying the
 ethylenic unsaturated monomer and the like. In a preferable example of
 the emulsification method, the monomer and the like are
 emulsified by adding water to an organic solvent phase containing the
 monomer, the colorant.
 DETD . . . solvent, from the viewpoints of the emulsion stability, health
 and safety. For substantially removing the low-boiling organic solvent,
 an appropriate method may be selected from various known
 methods such as evaporation, vacuum evaporation, and ultrafiltration
 in accordance with the type of. . .
 DETD . . . important to control the particle size. For improving the
 color purity and the density of the image formed by inkjet-recording
 process, it is preferable to reduce the average particle
 diameter of the colored particles. Specifically, the volume-average
 particle diameter of the. . . number of particles of 1 μm or
 larger per 1 μl of ink is preferably 1,000 or less. A known
 method such as centrifugal separation or microfiltration may be
 used for removal of these bulky particles. The separation may be
 performed. . .
 DETD The penetration-accelerating agent is preferably used for improving
 penetration of the ink composition into paper. Examples of the
 penetration-accelerating agent include alcohols such as ethanol,
 i-propanol, butanol, di(tri)ethylene glycol monobutylether, and
 1,2-hexanediol; sodium laurylsulfate; sodium. . . and nonionic
 surfactants. The penetration-accelerating agent is used in such a range
 as not to cause the bleeding, penetration through paper (print
 through), or the like of the printed image. Usually, sufficient effects
 are achieved by use of a penetration-accelerating agent. . .
 DETD The oxidation inhibitor is used for improving the storage life of the
 image. For examples, various organic anti-fading agents and
 metal complex anti-fading agents may be used as oxidation
 inhibitors. Examples of the organic anti-fading agent include
 hydroquinones, alkoxypheonols, dialkoxypheonols, phenols, anilines,
 amines, indanes, chromanes, alkoxyanilines, and heterocyclic rings. The
 metal complex anti-fading agent may be a nickel complex, a zinc
 complex, or the like. Specific examples of the metal complex
 anti-fading agent include the compounds described in the patents cited
 in Research Disclosure No. 17643 (section VII-I to J). . .
 DETD . . . used, for example, for pH adjustment and dispersion
 stabilization in the preparation of a colored particle dispersion by the
 emulsification method. The pH adjuster may be added in such an
 amount as to achieve a pH of 4.5 to 10.0, more. . . adjuster. Among
 the organic bases, triethanolamine, diethanolamine, N-
 methyl-diethanolamine, dimethylethanolamine, and the like are more
 preferable. Among the inorganic alkalis, alkali metal
 hydroxides, carbonate salts, and ammonia are preferable as the basic pH

adjuster. Among the alkali metal hydroxides, sodium hydroxide, lithium hydroxide, potassium hydroxide, and the like are particularly preferable. Among the carbonate salts, sodium carbonate, sodium . . .
DETD The inkjet-recording ink composition according to the invention may be favorably used as an ink for inkjet recording. The inkjet-recording process is not particularly limited, and may be, for example: an electric charge-control method of ejecting ink by electrostatic attraction; a drop-on-demand method (pressure pulse method) of using the vibrational pressure of a piezoelectric element; an acoustic inkjet method comprising converting electrical signals into acoustic beams, and irradiating the ink with the beams, thereby ejecting the ink by the generated radiation pressure; or a thermal inkjet method comprising forming air bubbles by heating ink and using the generated pressure for ejecting the ink. The inkjet-recording processes also include a process of ejecting many small-volume droplets of ink with a lower optical density (which is called photoink), a process of improving image quality by using multiple inks which have substantially the same hue and which have different optical density, and a process of using a colorless transparent ink.
DETD Among the processes above, the ink composition according to the invention is suitable as the inkjet-recording inks for thermal inkjet method, piezoelectric inkjet method, electrolytic inkjet method, acoustic inkjet method, and the like.
DETD <Image-Forming Process>
DETD The image-forming process according to the invention comprises recording an image on a record medium by using the inkjet-recording ink composition of the . . .
DETD The image recording is preferably conducted by an inkjet-recording process in an inkjet printer. In the inkjet-recording process, an image is recorded on a record medium by using the inkjet-recording ink composition of the invention. The ink-ejecting nozzle and the like used in the inkjet-recording process are not particularly limited and may be selected appropriately in accordance with the purpose. The inkjet-recording process is not particularly limited, and may be as described above.
DETD The record medium is not particularly limited, and may be a known record medium such as plain paper, resin coated paper, paper exclusively for inkjet-recording paper, a film, a multi-use paper adapted also for electrophotography, cloth, glass, metal, or ceramics. Among them, paper exclusively for inkjet-recording is preferable; and the paper is more preferably selected from papers described in, for example, JP-A No 8-169172, 8-27693, 2-276670, 7-276789, 9-323475, 62-238783, 10-153989, 10-217473, . . .
DETD In the invention, among the record media above, the following recording paper and film are particularly preferable. The recording paper and film each have a substrate and an ink-receiving layer formed thereon and optionally having other layers such as a . . .
DETD Examples of the support include: papers produced by a machine such as a Fourdriner machine or a cylinder paper machine from chemical pulps such as LBKP and NBKP, mechanical pulps such as GP, PCW, RMP, TMP, CTMP, CMP, and CGP, used paper pulps such as DIP and the like which are optionally provided with additives such as conventional pigments, binders, sizing agents, fixing agents, cationic agents, and paper-strength additive; synthetic papers, and plastic film sheets.
DETD Among the supports above, paper whose both surfaces are laminated with polyolefin (e.g., polyethylene, polystyrene, polyethylene terephthalate, polybutene, and copolymers thereof, etc.), and a plastic.

and number. . .
DETD An image was formed on an art paper and subjected to exposure. Thirty minutes after the exposure, the art paper was rubbed with an eraser for 10 strokes, and the change in the image density of the printed area was. . .
DETD The recorded image on each art paper was irradiated with a xenon light (85,000 lux) from a weather meter (Atlas C.165) for 4 days, and the image. . .
DETD Images were printed with the inks 401 to 413 thus prepared on sheets of art paper by an inkjet printer (printing density: 300 dpi; ejection frequency: 4 KHz; and number of nozzles: 64) to give a. . .
DETD An image was formed on art paper and subjected to exposure. Thirty minutes after the exposure, the art paper was rubbed with an eraser for 10 strokes, and the change in the image density of the printed area was. . .
DETD The recorded image on each art paper was irradiated with a xenon light (85,000 lux) from a weather meter (Atlas C.165) for 4 days, and the image. . .
CIM What is claimed is:
1. A method for producing a boron-containing heterocyclic ring by combining with each other directly or via a substituent; and X represents an alkali metal, quaternary ammonium, pyridinium, quinolinium, diazonium, morpholinium, tetrazolinium, acrydinium, phosphonium, sulfonium, oxosulfonium, iodonium, S, P, Cu, Ag, Hg, Pd, Fe, Co, . . .
12. An image-forming process comprising recording an image on a record medium by using the inkjet-recording ink composition of claim 1, and curing the. . .
13. A method for producing the inkjet-recording ink composition of claim 1, the method comprising emulsifying a solution including the ethylenic unsaturated monomer, the colorant, and the photopolymerization initiator containing the organic dye and. . .
14. The method according to claim 13, wherein the ethylenic unsaturated monomer includes an amide bond, a urethane bond, a glycidyl group, or. . .
15. The method according to claim 13, wherein the ethylenic unsaturated monomer includes a structure represented by formula (i), (ii) or (iii): #B9TR2788.
16. The method according to claim 13, wherein the organic dye has an absorption peak within the wavelength range of 400 to 1,200. . .
17. The method according to claim 13, wherein a content of the organic dye is 0.01 to 15% by mass based on a. . .

L23 ANSWER 2 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2005:321803 USPATFULL Full-text
TITLE: Water filter materials and water filters containing a mixture of microporous and mesoporous carbon particles
INVENTOR(S): Bahm, Jeannine Rebecca, Milford, OH, UNITED STATES
Pearls, Andrew Thomas, Cincinnati, OH, UNITED STATES
Vidal, Guillermo Matias, Cincinnati, OH, UNITED STATES
Collias, Dimitris Ioannis, Mason, OH, UNITED STATES
Mitchell, Michael Donovan, Cincinnati, OH, UNITED STATES
Astle, Robert E., Middlefield, CT, UNITED STATES
Faye, Katherine L.K., Moodus, CT, UNITED STATES
Governal, Robert Andrew, Middletown, CT, UNITED STATES
Hamlin, Thomas J., Vernon, CT, UNITED STATES
Lucht, Rebecca A., Rocky Hill, CT, UNITED STATES
Patel, Hemang, Wallingford, CT, UNITED STATES

DETD . . . larger pore area are more preferable. The synthetic amorphous silica may be an anhydrous silicic acid prepared by a dry method or a hydrous silicic acid prepared by a wet method, preferably a hydrous silicic acid.
DETD . . . in improving the water resistance of images, is preferably a cationic resin. Examples of the cationic resin include polyamide polyamine epichlorohydrin, polyethylensulfonate, polyamine sulfone, dimethylallylammonium chloride polymer, cationic polyacrylamide, and colloidal silica. Among them, polyamide polyamine epichlorohydrin is particularly preferable. The content of the cationic resin is preferably 1 to 15 wt %, more preferably 3 to. . .
DETD The layers (including the backcoat layer) on the recording paper or on the recording film may comprise a polymer latex. The polymer latex is used for improvement of the physical. . . and 62-110066, the disclosures of which are incorporated herein by reference. Addition of a polymer latex having a lower glass transition temperature (40° C. or lower) to a layer containing the mordant leads to prevention of the cracking and curl of the layer. Alternatively, addition of a polymer latex having a high glass transition temperature to the backcoat layer leads to prevention of the curl.
DETD In the image-forming process according to the invention, the record medium is not particularly limited. It is preferable to use a record medium having. . .
DETD . . . cartridge of an inkjet printer (experimental machine, manufactured by Microjet Ltd.) one by one; an image was recorded on art paper to give a density (OD) of 1.0 by using the same machine (printing density: 300 dpi; ejection frequency: 4 KHz). . .
DETD An image was formed on art paper and subjected to exposure. Thirty minutes after the exposure, the art paper was rubbed with an eraser for 10 strokes, and the change in the image density of the printed area was. . .
DETD The density (D_{sup.1}) of the recorded image on each art paper was measured by using a reflection densitometer (X-RITE 310 TR, manufactured by X-Rite), and then, the art paper was irradiated with a xenon light (85,000 lux) emitted from a weather meter (Atlas C165) for 4 days, and the. . .
DETD The density of a recorded image (D_{sup.3}) on each art paper was measured by using a reflection densitometer (X-RITE 310TR, manufactured by X-Rite), and then, after the art paper was stored under the condition at an ozone concentration of 5.0 ppm for 3 days, the density of the image. . .
DETD An image was formed on an art paper and subjected to exposure. Thirty minutes after the exposure, the art paper was rubbed with an eraser for 10 strokes, and the change in the image density of the printed area was. . .
DETD The density (D_{sup.5}) of a recorded image on each photographic glossy paper was measured by using a reflection densitometer (X-RITE 310 TR, manufactured by X-Rite), and then, the photographic paper was irradiated through a TAC filter with a xenon light (85,000 lux) from a weather meter (Atlas C165) for 7. . .
DETD The density of a recorded image (D_{sup.7}) on each photographic glossy paper was determined by using a reflection densitometer (X-Rite 310 TR, manufactured by X-Rite), and then, the photographic glossy paper was stored under the condition at an ozone concentration of 5.0 ppm for 3 days. The density of the image. . .
DETD Images were printed with the inks 301 to 316 thus prepared on sheets of art paper, using an inkjet printer (test machine manufactured by Microjet Ltd.; printing density: 300 dpi; ejection frequency: 4 KHz;

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005279696	A1	20051222
APPLICATION INFO:	US 2005-119120	A1	20050429 (11)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 2005-101130, filed on 7 Apr 2005, PENDING Continuation-in-part of Ser. No. US 2003-705572, filed on 11 Nov 2003, PENDING Continuation-in-part of Ser. No. US 2003-705174, filed on 11 Nov 2003, PENDING Continuation-in-part of Ser. No. US 2003-464209, filed on 18 Jun 2003, PENDING Continuation-in-part of Ser. No. US 2003-464210, filed on 18 Jun 2003, PENDING Continuation-in-part of Ser. No. US 2003-464209, filed on 18 Jun 2003, PENDING Continuation-in-part of Ser. No. US 2003-464210, filed on 18 Jun 2003, PENDING Continuation-in-part of Ser. No. US 2001-935962, filed on 23 Aug 2001, ABANDONED Continuation-in-part of Ser. No. US 2001-935810, filed on 23 Aug 2001, ABANDONED Continuation-in-part of Ser. No. US 2001-935962, filed on 23 Aug 2001, ABANDONED Continuation-in-part of Ser. No. US 2001-935810, filed on 23 Aug 2001, ABANDONED Continuation-in-part of Ser. No. WO 2003-055416, filed on 21 Feb 2003, PENDING Continuation-in-part of Ser. No. WO 2003-055409, filed on 21 Feb 2003, PENDING		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	THE PROCTER & GAMBLE COMPANY, INTELLECTUAL PROPERTY DIVISION, WINTON HILL TECHNICAL CENTER - BOX 161, 6110 CENTER HILL AVENUE, CINCINNATI, OH, 45224, US		
NUMBER OF CLAIMS:	17		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	1 Drawing Page(s)		
LINE COUNT:	1446		
CAS INDEXING IS AVAILABLE FOR THIS PATENT.			
SUM	Another source of contamination of drinking water supplies is chemical contaminants, such as chlorine, taste, odor, lead, arsenic, volatile organic compounds (VOC), trihalomethanes (THM), chromium, etc. As an example, trihalomethanes (THM), which are by-products that can. . .		
SUM	. . . produced from a unitary material, albeit a material that may be a mixture of different components, in a one step process, resulting in a single stage filter having multiple removal capacity. More specifically, there is a need for a single stage. . .		
SUM	. . . nanotubes, single-wall carbon nanotubes (SWNT), multi-wall carbon nanotubes (MWCNT), zeolites, activated alumina, magnesia, activated magnesia, diatomaceous earth, activated silica, hydrotalcites, metal-organic framework materials (MOF), glass particles or fibers, synthetic polymer nanofibers, natural polymer nanofibers, polyethylene fibers, polypropylene fibers, ethylene maleic anhydride. . .		
DETD	. . . an individual member or piece, which is used to form at least part of a filter material. For example, a fiber, a granule, a bead, etc. are each considered filter particles herein. Further, the filter particles can vary in size. . . from. . .		
DETD	The total pore volume is calculated as the volume of nitrogen adsorbed at a relative pressure of 0.9814 using the BET process (ASTM D 4820-99 standard), a process well known in the art. . .		
DETD	The micropore volume is calculated from the volume of nitrogen adsorbed at a relative pressure of 0.15 using the BET process (ASTM D 4820-99 standard), a process well known in the art.		

DETD . . . calculated from the difference between the volumes of nitrogen adsorbed at relative pressures of 0.9814 and 0.15 using the BET process (ASTM D 4820-99 standard), a process well known in the art.

DETD . . . is intended to refer to the distribution of the pore size as calculated by the Barrett, Joyner, and Halenda (BJH) process, a process well known in the art.

DETD As used herein, the term "carbonization" and its derivatives are intended to refer to a process in which the non-carbon atoms in a carbonaceous substance are reduced.

DETD As used herein, the term "activation" and its derivatives are intended to refer to a process in which a carbonized substance is rendered more porous.

DETD . . . carbon filter particles" and their derivatives are intended to refer to carbon particles that have been subjected to an activation process.

DETD . . . of their important properties as it relates to their ability to form a filter block. For example, a resistive heating method can be used to form filter blocks, wherein a filter material is heated by passing electricity between 2 ends of . . .

DETD The treatment temperature, when the activated carbon particles do not contain any noble metal catalysts (e.g., platinum, gold, palladium) may be between about 600° C. and about 1,200° C., preferably between about 700° C. . . 1,050° C., and most preferably between about 900° C. and about 1,000° C. If the activated carbon particles contain noble metal catalysts, the treatment temperature may be between about 100° C. and about 800° C., preferably between about 200° C. and . . .

DETD The BJH pore size distribution can be measured using the Barrett, Joyner, and Halenda (BJH) process, which is described in J. Amer. Chem. Soc., 73, 373-80 (1951) and Gregg and Sing, ADSORPTION, SURFACE AREA, AND POROSITY, . . .

DETD . . . of the fibers. Thus, the specific external surface area of the fibers is equal to: 4/Dp, where D is the fiber diameter and p is the fiber density. For monodispersed spherical particles, similar calculations yield the specific external surface area as equal to: 6/Dp, where D is . . . which is the diameter of a particle whose surface-to-volume ratio is equal to that of the entire particle distribution. A process, well known in the art, to measure the Sauter mean diameter is by laser diffraction, for example using the Malvern . . .

DETD On Aug. 30, 1977, respectively. See also, Dimitry, U.S. Pat. No. 3,886,093, which discloses activated carbons having uniformly distributed active metal sites and a method for making such activated carbons. The method of Dimitry involves mixing an aqueous solution of a lignin salt with an aqueous solution of a transition metal salt to precipitate the transition metal and lignin as a metal lignate. The transition metal must be capable of forming a chemical bond with the lignin and in so doing precipitating the lignin from solution as a metal lignate. Dimitry discloses that the time required to complete the precipitation is less than one hour and that usually 30 minutes is sufficient for this purpose. According to Dimitry, suitably the wet metal lignate precipitate can then be dried in a spray drier. The precipitate is then carbonized at a temperature between 371° . . . 983° C. and finally activated at a temperature between 760° C. and 1065° C. Dimitry states that, although drying the metal

lignate precipitate is not critical to form an activated carbon product, drying is necessary to form a high surface area. . . .

DETD While not intending to limit the present invention, one method of producing a substantially uniform dispersion of a silver or silver-containing material on a porous carbon matrix comprises: forming a . . . a carbon precursor as defined above; forming a uniform powdered mixture of the co-crystallite and organic solids comprising an alkali metal hydroxide; pyrolyzing the powdered mixture in an inert atmosphere at a temperature in the range of from about 400° C. . .

DETD Any of a variety of known techniques can be employed to form the co-crystallite in the method of this invention which affords uniform co-crystallization, that is, simultaneous crystallization, of the carbon precursor and the precursor of the . . . technique to form the uniform co-crystallite of the carbon precursor and precursor of the silver or silver-containing material in the method of this invention involves the formation of a stable solution of both such precursors in a suitable solvent and spray . . . drying chamber, where it collects and from which it is later removed for use in the subsequent steps of the method of this invention. Gas passes from the drying chamber and then to a cyclone system where co-crystallite powder entrained in . . . stream is separated from the gas and passes downward through a line for collection. The weight ratio of the dispersed metal or metal-containing material to the active carbon matrix in the composition of this invention is preferably from 1:10,000 to 1:1, based on the weight of the metal or metal-containing material, respectively.

DETD . . . suitable for use in the present invention, which are prepared by step growth polymerization include, but are not limited to: polyethyleneimine, polylysine, DAB-Am and PAMAM dendrimers (or hyperbranched polymers containing the amine or quaternary nitrogen functional group), polyaminoamides, polyhexamethylenebiguanide, polydimethylamine-epichlorohydrin, and . . .

DETD . . . use in the present invention, which contain amine nitrogen but are made more basic by quaternization include the alkylation of polyethyleneimine by methylchloride, and the alkylation of polyaminoamides with epichlorohydrin.

DETD Preferred cationic polymers for use in the present invention include polyaminoamides, polyethyleneimine, polyvinylamine, polydiallyldimethylammonium chloride, polydimethylamine-epichlorohydrin, polyhexamethylenebiguanide, poly-(2-(2-ethoxy)-ethoxyethyl-guanidinium)chloride.

DETD The cationic polymers of the invention can be attached to the surface of carbon by physisorption or chemical crosslinking. Physisorption can be accomplished by spraying a solution of the polymer onto the surface of carbon, or by adding the solution of the polymer to a suspension of the carbon in water. This method of application is applicable to all polymers of the invention. Chemical crosslinking is generally only applicable to those polymers capable of undergoing a crosslinking reaction. This would exclude, for example, the homopolymer of diallyldimethylammonium chloride, and any other polymer that lacked a reactive functional group. If the reactive polymer was thermosetting (e.g. the polyaminoamide grafted with epichlorohydrin), it could simply be added to the surface of carbon by one of the two methods already mentioned and heated. If the reactive polymer was not thermosetting, then a suitable crosslinking molecule needs to be introduced into the polymer solution before application to the carbon surface. In the polymers of the present invention (which all contain reactive nucleophilic functional groups), the crosslinking molecules must be

electrophilic and can include citric acid, ethyleneglycol diglycidyl ether, 3-glycidyloxypropylsilane, and the like. During the crosslinking reaction the polymer may form covalent bonds to carbon, but this is not a requirement of the invention. Preferably, the . . .

DETD . . . nanotubes (SWNT), multi-wall carbon nanotubes (MWNT), zeolites, activated alumina, magnesia, activated magnesia, diatomaceous earth, silver particles, activated silica, hydrotalcites, glass, metal-organic framework materials (MOF), glass particles or fibers, synthetic polymer nanofibers, natural polymer nanofibers, polyethylene fibers, polypropylene fibers, ethylene maleic anhydride. . .

DETD . . . powder between non-wovens as described in U.S. Pat. No. 6,077,588, which is herein incorporated by reference, using the green strength method as described in U.S. Pat. No. 5,928,588, which is herein incorporated by reference, activating the resin binder that forms the block, which is herein incorporated by reference, or by using a resistive heating method as described in PCT Application Serial No. WO 98/43796.

CLM What is claimed is:

1. the group consisting of: polyvinylamine, poly(N-methylvinylamine), polyallylamine, polyallyldimethylamine, polydiallylmethylamine, polydiallyldimethylammonium chloride, polyvinylpyridinium chloride, poly(2-vinylpyridine), poly(4-vinylpyridine), polyvinylimidazole, poly(4-aminomethylstyrene), poly(4-aminostyrene), polyvinyl(acrylamide-co-dimethylaminopropylacrylamide), polyvinyl(acrylamide-co-dimethylaminoethylmethacrylate), polyethyleneimine, polylysine, DAB-Am and PAMAM dendrimers, polyaminoamides, polyhexamethylenebiguanide, polydimethylamine-epichlorohydrin, aminopropyltriethoxysilane, N-(2-aminoethyl)-3-aminopropyltrimethoxysilane, N-trimethoxysilylpropyl-N,N,N-trimethylammonium chloride, bis(trimethoxysilylpropyl)amine, chitosan, grafted starch, the product of alkylation of polyethyleneimine by methylchloride, the product of alkylation of polyaminoamides with epichlorohydrin, cationic polyacrylamide with cationic monomers, dimethyl aminoethyl acrylate methyl chloride. . .

5. The filter of claim 4, wherein the cationic polymer is selected from the group consisting of: polyaminoamides, polyethyleneimine, polyvinylamine, polydiallyldimethylammonium chloride, polydimethylamine-epichlorohydrin, polyhexamethylenebiguanide, poly-(2-(2-ethoxy)-ethoxyethyl-guanidinium)chloride.

L23 ANSWER 3 OF 70 USPATTFULL on STN
ACCESSION NUMBER: 2005:302825 USPATTFULL Full-text
TITLE: Water filter materials and water filters containing a mixture of microporous and mesoporous carbon particles
INVENTOR(S): Collias, Dimitris Ioannis, Mason, OH, UNITED STATES
Mitchell, Michael Donovan, Cincinnati, OH, UNITED STATES
Astle, Robert E., Middlefield, CT, UNITED STATES
Faye, Katharine L.K., Moodus, CT, UNITED STATES
Governal, Robert Andrew, Middletown, CT, UNITED STATES
Hamlin, Thomas J., Vernon, CT, UNITED STATES
Lucht, Rebecca A., Rocky Hill, CT, UNITED STATES
Patel, Hemang, Wallingford, CT, UNITED STATES
PATENT ASSIGNEE(S): The Procter & Gamble Company (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 2005263453 AI 20051201
APPLICATION INFO.: US 2005-101130 AI 20050407 (11)
RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2003-705752, filed on 10 Nov 2003, ABANDONED Continuation-in-part of Ser. No. US 2003-705174, filed on 11 Nov 2003, PENDING Continuation-in-part of Ser. No. US 2003-464209, filed on 18 Jun 2003, PENDING Continuation-in-part of Ser. No. US 2003-464210, filed on 18 Jun 2003, PENDING Continuation-in-part of Ser. No. US 2001-935962, filed on 23 Aug 2001, ABANDONED Continuation-in-part of Ser. No. US 2001-935810, filed on 23 Aug 2001, ABANDONED Continuation of Ser. No. WO 2003-US5416, filed on 21 Feb 2003, PENDING Continuation of Ser. No. WO 2003-US5409, filed on 21 Feb 2003, PENDING

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: THE PROCTER & GAMBLE COMPANY, INTELLECTUAL PROPERTY DIVISION, WINTON HILL TECHNICAL CENTER - BOX 161, 6110 CENTER HILL AVENUE, CINCINNATI, OH, 45224, US 17

NUMBER OF CLAIMS: 17
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Page(s)
LINE COUNT: 1432
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

SUMM Another source of contamination of drinking water supplies is chemical contaminants, such as chlorine, taste, odor, lead, arsenic, volatile organic compounds (VOC), trihalomethanes (THM), chromium, etc. As an example, trihalomethanes (THM), which are by-products that can . . .

SUMM . . . produced from a unitary material, albeit a material that may be a mixture of different components, in a one step process, resulting in a single stage filter having multiple removal capacity. More specifically, there is a need for a single stage . . .

SUMM . . . nanotubes, single-wall carbon nanotubes (SWNT), multi-wall carbon nanotubes (MWNT), zeolites, activated alumina, magnesia, activated magnesia, diatomaceous earth, activated silica, hydrotalcites, metal-organic framework materials (MOF), glass particles or fibers, synthetic polymer nanofibers, natural polymer nanofibers, polyethylene fibers, polypropylene fibers, ethylene maleic anhydride. . .

DETD . . . an individual member or piece, which is used to form at least part of a filter material. For example, a fiber, a granule, a bead, etc. are each considered filter particles herein. Further, the filter particles can vary in size, from . . .

DETD . . . total pore volume is calculated as the volume of nitrogen adsorbed at a relative pressure of 0.9814 using the BET process (ASTM D 4820-99 standard), a process well known in the art.

DETD The micropore volume is calculated from the volume of nitrogen adsorbed at a relative pressure of 0.15 using the BET process (ASTM D 4820-99 standard), a process well known in the art.

DETD . . . calculated from the difference between the volumes of nitrogen adsorbed at relative pressures of 0.9814 and 0.15 using the BET process (ASTM D 4820-99 standard), a process well known in the art.

DETD . . . is intended to refer to the distribution of the pore size as calculated by the Barrett, Joyner, and Halenda (BJH) process, a process well known in the art.

DETD As used herein, the term "carbonization" and its derivatives are intended to refer to a process in which the non-carbon atoms in a carbonaceous substance are reduced.

DETD As used herein, the term "activation" and its derivatives are intended to refer to a process in which a carbonized substance is rendered more porous.
DETD carbon filter particles* and their derivatives are intended to refer to carbon particles that have been subjected to an activation process.
DETD of their important properties as it relates to their ability to form a filter block. For example, a resistive heating method can be used to form filter blocks, wherein a filter material is heated by passing electricity between 2 ends of.
DETD The treatment temperature, when the activated carbon particles do not contain any noble metal catalysts (e.g., platinum, gold, palladium) may be between about 600° C. and about 1,200° C., preferably between about 700° C. . . 1,050° C., and most preferably between about 900° C. and about 1,000° C. If the activated carbon particles contain noble metal catalysts, the treatment temperature may be between about 100° C. and about 800° C., preferably between about 200° C. and.
DETD The BJH pore size distribution can be measured using the Barrett, Joyner, and Halenda (BJH) process, which is described in J. Amer. Chem. Soc., 73, 373-80 (1951) and Gregg and Sing, ADSORPTION, SURFACE AREA, AND POROSITY.
DETD of the fibers. Thus, the specific external surface area of the fibers is equal to: 4/Dp, where D is the fiber diameter and p is the fiber density. For monodispersed spherical particles, similar calculations yield the specific external surface area as equal to: 6/Dp, where D is. . . which is the diameter of a particle whose surface-to-volume ratio is equal to that of the entire particle distribution. A process, well known in the art, to measure the Sauter mean diameter is by laser diffraction, for example using the Malvern.
DETD On Aug. 30, 1977, respectively. See also, Dimitry, U.S. Pat. No. 3,886,093, which discloses activated carbons having uniformly distributed active metal sites and a method for making such activated carbons. The method of Dimitry involves mixing an aqueous solution of a lignin salt with an aqueous solution of a transition metal salt to precipitate the transition metal and lignin as a metal lignate. The transition metal must be capable of forming a chemical bond with the lignin and in so doing precipitating the lignin from solution as a metal lignate. Dimitry discloses that the time required to complete the precipitation is less than one hour and that usually 30 minutes is sufficient for this purpose. According to Dimitry, suitably the wet metal lignate precipitate can then be dried in a spray drier. The precipitate is then carbonized at a temperature between 371° . . . 983° C. and finally activated at a temperature between 760° C. and 1065° C. Dimitry states that, although drying the metal lignate precipitate is not critical to form an activated carbon product, drying is necessary to form a high surface area.
DETD While not intending to limit the present invention, one method of producing a substantially uniform dispersion of a silver or silver-containing material on a porous carbon matrix comprises: forming a. . . a carbon precursor as defined above; forming a uniform powdered mixture of the co-crystallite and organic solids comprising an alkali metal hydroxide; pyrolyzing the powdered mixture in an inert atmosphere at a temperature in the range of from about 400° C. . .

DETD Any of a variety of known techniques can be employed to form the co-crystallite in the method of this invention which affords uniform co-crystallization, that is, simultaneous crystallization, of the carbon precursor and the precursor of the. . . technique to form the uniform co-crystallite of the carbon precursor and precursor of the silver or silver-containing material in the method of this invention involves the formation of a stable solution of both such precursors in a suitable solvent and spray. . . drying chamber, where it collects and from which it is later removed for use in the subsequent steps of the method of this invention. Gas passes from the drying chamber and then to a cyclone system where co-crystallite powder entrained in. . . stream is separated from the gas and passes downward through a line for collection. The weight ratio of the dispersed metal or metal-containing material to the active carbon matrix in the composition of this invention is preferably from 1:10,000 to 1:1, based on the weight of the metal or metal-containing material, respectively.
DETD suitable for use in the present invention, which are prepared by step growth polymerization include, but are not limited to: polyethyleneimine, polylysine, DAB-Am and PAMAM dendrimers (or hyperbranched polymers containing the amine or quaternary nitrogen functional group), polyaminoamides, polyhexamethylenebiguanide, polydimethylamine-epichlorohydrine, and.
DETD use in the present invention, which contain amine nitrogen but are made more basic by quaternization include the alkylation of polyethyleneimine by methylchloride, and the alkylation of polyaminoamides with epichlorohydrine.
DETD Preferred cationic polymers for use in the present invention include polyaminoamides, polyethyleneimine, polyvinylamine, polydiallyldimethylammonium chloride, polydimethylamine-epichlorohydrin, polyhexamethylenebiguanide, poly-[2-(2-ethoxy)-ethoxyethyl-guanidinium]chloride.
DETD The cationic polymers of the invention can be attached to the surface of carbon by physisorption or chemical crosslinking. Physisorption can be accomplished by spraying a solution of the polymer onto the surface of carbon, or by adding the solution of the polymer to a suspension of the carbon in water. This method of application is applicable to all polymers of the invention. Chemical crosslinking is generally only applicable to those polymers capable of undergoing a crosslinking reaction. This would exclude, for example, the homopolymer of diallyldimethylammonium chloride, and any other polymer that lacked a reactive functional group. If the reactive polymer was thermosetting (e.g. the polyaminoamide grafted with epichlorohydrin), it could simply be added to the surface of carbon by one of the two methods already mentioned and heated. If the reactive polymer was not thermosetting, then a suitable crosslinking molecule needs to be introduced into the polymer solution before application to the carbon surface. In the polymers of the present invention (which all contain reactive nucleophilic functional groups), the crosslinking molecules must be electrophilic and can include citric acid, ethyleneglycol diglycidyl ether, 3-glycidyloxypropyltriethoxysilane, and the like. During the crosslinking reaction the polymer may form covalent bonds to carbon, but this is not a requirement of the invention. Preferably, the.
DETD . . . nanotubes (SWNT), multi-wall carbon nanotubes (MWNT), zeolites, activated alumina, magnesia, activated magnesia, diatomaceous earth, silver particles, activated silica, hydrotalcites, glass, metal-organic framework materials (MOF), glass particles or fibers, synthetic polymer nanofibers, natural polymer nanofibers,

polyethylene fibers, polypropylene fibers, ethylene maleic anhydride.
DETD powder between non-wovens as described in U.S. Pat. No. 6,077,588, which is herein incorporated by reference, using the green strength method as described in U.S. Pat. No. 5,928,588, which is herein incorporated by reference, activating the resin binder that forms the block, which is herein incorporated by reference, or by using a resistive heating method as described in PCT Application Serial No. WO 98/43796.
CLM What is claimed is:
1. the group consisting of: polyvinylamine, poly(N-methylvinylamine), polyallylamine, polyallyldimethylamine, polydiallylmethylamine, polydiallyldimethylammonium chloride, polyvinylpyridinium chloride, poly(2-vinylpyridine), poly(4-vinylpyridine), polyvinylimidazole, poly(4-aminomethylstyrene), poly(4-aminostyrene), polyvinyl(acrylamide-co-dimethylaminopropylacrylamide), polyvinyl(acrylamide-co-dimethylaminoethylmethacrylate), polyethyleneimine, polylysine, DAB-Am and PAMAM dendrimers, polyaminoamides, polyhexamethylenebiguanide, polydimethylamineepichlorohydrine, aminopropyltriethoxysilane, N-(2-aminoethyl)-3-aminopropyltriethoxysilane, N-trimethoxysilylpropyl-N,N,N-trimethylammonium chloride, bis(trimethoxysilylpropyl)amine, chitosan, grafted starch, the product of alkylation of polyethyleneimine by methylchloride, the product of alkylation of polyaminoamides with epichlorohydrine, cationic polyacrylamide with cationic monomers, dimethyl aminoethyl acrylate methyl chloride.
2. The filter of claim 1, wherein the cationic polymer is selected from the group consisting of: polyaminoamides, polyethyleneimine, polyvinylamine, polydiallyldimethylammonium chloride, polydimethylamine-epichlorohydrin, polyhexamethylenebiguanide, polydimethylamine-epichlorohydrin, polyhexamethylenebiguanide, poly-[2-(2-ethoxy)-ethoxyethyl-guanidinium]chloride.

L23 ANSWER 4 OF 70 USPATFULL ON STN
ACCESSION NUMBER: 2005:299726 USPATFULL Full-text
TITLE: Ink composition and inkjet recording method
INVENTOR(S): Ishizuka, Takahiro, Kanagawa, JAPAN
Fujiwara, Toshiaki, Kanagawa, JAPAN
Takehashi, Osamu, Kanagawa, JAPAN
Yamanouchi, Junichi, Kanagawa, JAPAN
Yabuki, Yoshiharu, Kanagawa, JAPAN
PATENT ASSIGNEE(S): FUJI PHOTO FILM CO., LTD. (non-U.S. corporation)
NUMBER KIND DATE
PATENT INFORMATION: US 2005:61395 A1 20051124
APPLICATION INFO: US 2003:125406 A1 20050510 (11)
RELATED APPL. INFO.: Continuation of Ser. No. US 2003-352973, filed on 29 Jan 2003, ABANDONED
NUMBER DATE
PRIORITY INFORMATION: JP 2002-21652 20020130
JP 2002-22012 20020130
JP 2002-22493 20020130
DOCUMENT TYPE: APPLICATION
FILE SEGMENT:
LEGAL REPRESENTATIVE: BUCHANAN INGERSOLL PC, (INCLUDING BURNS, DOANE, SWECKER & MATHIS), POST OFFICE BOX 1404, ALEXANDRIA, VA, 22313-1404, US

NUMBER OF CLAIMS: 11
EXEMPLARY CLAIM: 1
LINE COUNT: 3645
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
TI Ink composition and inkjet recording method
AB . . . composition that when printed using a nozzle, does not cause clogging at the chip of the nozzle, is free from paper dependency, and when printed on an arbitrarily chosen paper, exhibits superior properties in water resistance, scratch resistance, lightfastness and ozone resistance and an inkjet recording method using it. The ink composition contains colored fine particles containing an oil-soluble polymer and an oil-soluble dye having an oxidation.
SUMM The present invention relates to an ink composition comprising an aqueous colored fine particle dispersion and an inkjet recording method using it. More specifically, the present invention relates to an ink composition that is high in quality of recorded images, is superior in ejection stability and is superior in preservability of obtained images and to an inkjet recording method using it.
SUMM inks are known. Among them, the aqueous inks are the main current from the standpoints of productivity, easiness in handling, odor, and stability.
SUMM . . . advantages such as high transparency and high color density. Accordingly, when the aqueous ink is used for printing on plain paper, it causes bleeding, thereby remarkably lowering the printing quality. Additionally, the aqueous inks involved a defect such that they are.
SUMM When a recording paper having an ink receiving layer containing a porous inorganic pigment on the surface thereof (so-called "photo quality paper"), which has appeared with a rise in intention to high quality of the latest inkjet technology, is used, it has.
SUMM JP-A-58-45272, JP-A-6-340825, JP-A-7-268254, JP-A-7-268257, JP-A-7-268260 and U.S. Pat. No. 4,692,188 propose a method of incorporating a dye into polyurethane or polyester dispersion particles.
SUMM On the other hand, JP-A-11-686637 proposes a method of incorporating a dye into a polydisperse polymer mainly containing dissociative group (such as polyurethanes) and describes that a (water-soluble). . . small so that the problem of peeling of the dye occurring in the case of use in the photo quality paper could not be solved.
SUMM In addition, JP-A-10-279873 discloses a method in which an acrylic polymer and an oil-soluble dye are dissolved and dispersed in an organic solvent, and the organic. . . prepare colored polymer fine particles. There were problems in the recorded image quality, particularly the quality when recorded on a paper medium for photo quality and the stability in continuous recording. Also, it could not be said that the lapsing stability.
SUMM . . . to solve is to provide an ink composition having properties such that in an aqueous ink advantageous in handling properties, odor and stability, the ejection stability is high, the color formation is good, and the image obtained when printed on an arbitrarily selected paper is superior in hue, preservability, stability and water resistance and overcoming a defect in image quality such as bleeding of.
SUMM (4) An inkjet recording method comprising using the ink composition as set forth in (1) to (3) as above.
SUMM Preferred embodiments of the ink composition and inkjet recording method as set forth in (1) to (4) as above are ink compositions and inkjet recording method as set forth in (5) to (11) as

below.

SUPM (11) The inkjet recording method as set forth in (4) as above, wherein the recording is carried out on a material to be recorded comprising . . .

DETD The measurement method of the value (Eox) of oxidation potential is described in, for example, Delahay, New Instrumental Methods in Electrochemistry, (1954), by . . .

DETD . . . aliphatic group, an aromatic group, or a heterocyclic group. Especially, it is preferred that Q represents a group comprising a non-metal atom necessary for forming a 5- to 8-membered ring. The 5- to 8-membered ring may be substituted or may . . . or may have an unsaturated bond. Among them, an aromatic group and a heterocyclic group are particularly preferred. As the non-metal atom are preferable a nitrogen atom, an oxygen atom, a sulfur atom, and a carbon atom. Specific examples of such . . .

DETD M represents a hydrogen atom, a metal element, a metal oxide, a metal hydroxide, or a metal halide.

DETD . . . Ir, Pt, Cu, Ag, Au, Zn, Cd, Hg, Al, Ga, In, Si, Ge, Sn, Pb, Sb, and Bi as the metal element; VO and GeO as the metal oxide; Si(OH).sub.2, Cr(OH).sub.2, and Sn(OH).sub.2 as the metal hydroxide; and AlCl₃, SiCl₄.sub.2, VCl₃, VCl₄.sub.2, VOCl₃, FeCl₃, GaCl₃, and ZrCl₄ as the metal halide. Among them, Cu, Ni, Zn, and Al are more preferred, with Cu being most preferred.

DETD Preferably, M represents a hydrogen atom, a metal element, a metal oxide, a metal hydroxide, or a metal halide, more preferably Cu, Ni, Zn, or Al, and most preferably Cu.

DETD Preferably, M represents a hydrogen atom, a metal element, a metal oxide, a metal hydroxide, or a metal halide, more preferably Cu, Ni, Zn, or Al, and most preferably Cu.

DETD . . . number of the substituents Xn (n=1 to 4) and Ym (m=1 to 4) to be introduced depending on the synthesis process. In many cases, such a mixture of analogues is statically expressed in terms of average. When the mixture of analogues.

DETD . . . the following general formula (compound P) and/or a diiminoisoindoline derivative represented by the following general formula (compound Q) with a metal derivative represented by the following general formula (C-M). #STR142#

DETD Here, the V value (cm.sup.3/mole) and SP value (J.sup.0.5/cm.sup.1.5) are values calculated by the Fedors method. The calculation method is described in Polym. Eng. Sci., Vol. 14, pp. 147 (1974).

DETD In the inkjet inks of magenta, cyan, yellow and black colors to be used for full-color inkjet recording, a recording method in which the ink composition of the present invention using the oil-soluble dye represented by the general formula (M-1) is . . .

DETD . . . constitutional raw materials can be used in an arbitrary proportion depending on various purposes (such as adjustment of the glass transition temperature (Tg) or dissolution of the polymer, affinity with the dye, and the stability of the dispersion).

DETD With respect to the dissociating group, the anionic dissociating group may further be a salt of an alkali metal (such as Na and K) or an ammonium ion; and the cationic dissociating group may further be a salt of . . .

DETD . . . cycloalkyl group may contain an unsaturated bond in the 3-membered to 8-membered ring, or may have a substituent or a crosslinking group. Examples of the substituent include a halogen atom, an aliphatic group, a hydroxyl group, an acyl group, an aryl group, an alkoxy group, an epoxy group, and an alkyl group; and examples of the crosslinking group include methylene,

and a cylinder paper machine. Besides, synthetic papers and plastic films may be used.

DETD As the synthetic amorphous silica, any of silicic anhydride obtained by the dry production process and hydrated silicic acid obtained by the wet production process can be used, and particularly, the hydrated silicic acid is suitably used.

DETD . . . the ink-receiving layer include water-soluble polymeric materials such as polyvinyl alcohol, silanol-modified polyvinyl alcohol, starch, cationic starch, casein, gelatin, carboxymethyl cellulose, hydroxymethyl cellulose, polyvinyl pyrrolidone, polyalkylene oxides, and polyalkylene oxide derivatives; and water-dispersible polymeric materials such as styrene-butadiene latices and acrylic emulsions.

DETD Examples of the cationic resin include polyamidepolyamine epichlorohydrin, polyethyleneimine, polyaminesulfone, dimethylallylammonium chloride polymers, cationic polyacrylamide, and colloidal silica. Of these are particularly suitable polyamidepolyamine epichlorohydrin.

DETD . . . styrene/maleic acid salt copolymer, a styrene/acrylic acid salt copolymer, polyvinyl alcohol, silanol-modified polyvinyl alcohol, starch, cationic starch, casein, gelatin, carboxymethyl cellulose, hydroxymethyl cellulose, and polyvinyl pyrrolidone; and water-dispersible polymeric materials such as styrene-butadiene latices and acrylic emulsions.

DETD In the respective layers of the recording paper or recording film may be added a polymer latex.

DETD The polymer latex is described in JP-A-62-245258, JP-A-62-1316648, and JP-A-62-110066. When a polymer latex having a low glass transition temperature (40° C. or lower) is added in the layer containing a mordant, the film cracks and the curling can be prevented. Further, when a polymer latex having a high glass transition temperature is added to the back coat layer, the curling can be prevented.

DETD The recording medium that is used in the inkjet recording method of the present invention is not particularly limited. However, when a recording medium comprising a support having an ink receiving . . . a high-quality image, and hence, such is preferred.

DETD With respect to the conventional inks, in the case where a recording paper provided with an ink receiving layer containing a porous inorganic pigment such as a white pigment is used, there was a problem such that the penetration of the ink into the recording paper is poor so that the dye likely peels apart from the surface of the recording paper upon rubbing by fingers. However, since the ink of the present invention is superior in penetration, such a problem is . . .

DETD . . . bar 5 times, to prepare fine particles. The obtained emulsion was subjected to desolvation by a rotary evaporator until the odor of ethyl acetate had disappeared. A volume average particle size of the colored fine particles in the dispersion was measured. . .

DETD . . . a cartridge of an inkjet printer, PM-670C (manufactured by SEIKO EPSON CORPORATION) and imageview recorded on each of a plain paper for PPC and an inkjet paper photo glossy paper, EX (manufactured by FUJI PHOTO FILM CO., LTD.) using the same inkjet printer. The resulting images were evaluated in the . . . printing.

DETD C: The disturbance of the printing was observed from the start until completion of the printing. <Evaluation of Paper Dependency>

DETD The image formed on the photo glossy paper was compared with the image formed on the plain paper for PPC in terms of color

ethylene, and isopropylidene.

DETD . . . the oil-soluble polymer, and the hydrophobic high-boiling organic solvent, in an aqueous medium. Concretely, for example, there are included a method in which a latex of the oil-soluble polymer is previously prepared, with which are then impregnated the oil-soluble dye and the hydrophobic high-boiling organic solvent; and a co-emulsification dispersion method. Of these is preferable the co-emulsification dispersion method.

DETD The co-emulsification dispersion method can be carried out by dispersing an oil phase of the oil-soluble polymer and the oil-soluble dye dissolved in the . . . an aqueous phase composed mainly of water to form fine droplets of the oil phase. In the co-emulsification dispersion, a method of adding the oil phase into the aqueous phase is general. However, so-called phase reversal of emulsion can also be . . .

DETD . . . the hydrophobic high-boiling solvent are dispersed in the aqueous medium to form an aqueous ink according to the co-emulsification dispersion method, it is particularly important to control the particle size. In order to increase the color purity and density during the . . .

DETD . . . the number of particles of 1 μm or larger is 1,000 or less per μL of the ink. As a method of removing the coarse particles, known centrifugation and precision filtration are employable. Such separation means may be carried out immediately. . .

DETD . . . generally 50 MPa or more, preferably 60 MPa or more, and more preferably 180 MPa or more. For example, a method of employing a combination of two or more emulsification devices such that after undergoing the emulsification by an emulsification device, the emulsion is passed through a high-pressure homogenizer is particularly preferred. Further, a method in which after once undergoing the emulsification dispersion by these emulsification devices, additives such as a wetting agent and a . . .

DETD . . . remove the low-boiling organic solvent from the standpoints of the stability and safety and hygiene of the emulsion. As the method of removing the low-boiling organic solvent, various known methods can be employed depending on the kind of the solvent. That. . .

DETD (Inkjet Ink and Inkjet Recording Method)

DETD In the inkjet recording method of the present invention, the recording is carried out using the inkjet ink. An ink nozzle that is used is . . .

DETD The penetration promoter is suitably used for the purpose of promoting the penetration of the inkjet ink into paper.

DETD As the antioxidant, various organic or metal complex-based anti-fading agents can be used.

DETD Examples of the metal complex-based anti-fading agent include nickel complexes and zinc complexes. Concretely, there can be used compounds as described in the patents.

DETD Further, as the material to be recorded, besides the foregoing special inkjet papers, the following recording paper and recording film are suitably used.

DETD The recording paper or recording film comprises a support having an ink receiving layer and optionally, other layers (such as a back coat. . .

DETD . . . pulps such as LBKP and NBKP; mechanical pulps such as GP, PGW, RMP, TMP, CTMP, CMP, and CGP; and waste paper pulps such as DIP. If desired, conventionally known pigments, binders, sizing agents, fixing agents, cationic agents, and paper strength additives may be added to and mixed with the pulps. The support can be formed using various apparatus such as a fourdrinier paper machine

tone. The evaluation was made on the following three grades.

A: A difference. . .

DETD The sample printed on the photo glossy paper was visually evaluated for unevenness in gloss on the following three grades.

A: No unevenness in gloss was observed. . .

DETD In the case where the penetration of the ink for inkjet recording into paper is insufficient, the unevenness in gloss is remarkable. Thus, the unevenness in gloss will be an index of the penetration. . .

DETD The photo glossy paper having an image formed thereon was dried at room temperature for one hour, immersed in water for 30 seconds, and . . .

DETD The photo glossy paper having an image formed thereon was irradiated with a xenon light (100,000 l+) using a weatherometer (Atlas C. 165) for. . .

DETD . . . the case where the pigment retention rate was less than 50% is designated as "E", respectively.

TABLE 2

Ink No.	Dispersion Printing		Paper		Water	
	Light- resistance	Ozone resistance	performance dependency	Gloss	resistance	fastness
101	BM-1	A	A	A	A	A
102.	Invention					

DETD . . . 2, the ink compositions of the present invention were superior printability, color development, color tone and gloss, were free from paper dependency, and were superior in water resistance, lightfastness and ozone resistance.

DETD . . . bar 5 times, to prepare fine particles. The obtained emulsion was subjected to desolvation by a rotary evaporator until the odor of ethyl acetate had disappeared. A volume average particle size of the colored fine particles in the dispersion was measured. . .

DETD . . . a cartridge of an inkjet printer, PM-670C (manufactured by SEIKO EPSON CORPORATION) and imageview recorded on each of a plain paper for PPC and an inkjet paper photo glossy paper, EX (manufactured by FUJI PHOTO FILM CO., LTD.) using the same inkjet printer. The resulting images were evaluated in the . . . shown in Table 4 below. Incidentally, each of the evaluation items of the evaluation of printing performance, the evaluation of paper dependency, the evaluation of gloss, the evaluation of water resistance, the evaluation of lightfastness, and the ozone resistance was determined on the same evaluation standards as in Example 1.

TABLE 4

Ink No.	Dispersion Printing		Paper		Water	
	Light- resistance	Ozone resistance	performance dependency	Gloss	resistance	fastness
201	BC-1	A	A	A	A	A
202.	Invention					

DETD . . . 4, the ink compositions of the present invention were superior printability, color development, color tone and gloss, were free from paper dependency, and were superior in water resistance, lightfastness and ozone resistance.

DETD . . . used in the Examples and the comparative compounds are shown in Table 6 below.

TABLE 6

Ink No.	Oil-soluble dye resistance	Printing Ozone performance potential	Paper Oxidation dependency Remarks	Water resistance	Light-fastness	Dark fastness
501	AI-19	A	A	A	A	
DETD	. . . for inkjet recording of the present invention were superior printability, color development and color tone and gloss, were free from paper dependency, and were superior in water resistance, lightfastness, dark heat resistance and ozone resistance.					
DETD	. . . composition that when printed using a nozzle, does not cause clogging at the chip of the nozzle, is free from paper dependency, and when printed on an arbitrarily chosen paper, exhibits superior properties in water resistance, scratch resistance, lightfastness and ozone resistance and an inkjet recording method using it.					
CLM	What is claimed is: 4. An inkjet recording method comprising using the ink composition according to claim 1. 11. The inkjet recording method as in claim 4, wherein the recording is carried out on a material to be recorded comprising a support having.					

L23 ANSWER 5 OF 70 USPATFULL on STW
ACCESSION NUMBER: 2005:281714 USPATFULL Full-text
TITLE: Modified creping adhesive composition and method of use thereof
INVENTOR(S): Clungeon, Nancy, Manawa, WI, UNITED STATES
Boettcher, Jeffrey J., Appleton, WI, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005245669	A1	20051103
APPLICATION INFO.:	US 2004-833473	A1	20040428 (10)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	DANN, DORFMAN, HERRELL & SKILLMAN, 1601 MARKET STREET, SUITE 2400, PHILADELPHIA, PA, 19101-2307, US		
NUMBER OF CLAIMS:	25		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	1 Drawing Page(s)		
LINE COUNT:	670		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
TI Modified creping adhesive composition and method of use thereof
AB . . . adhesive composition, comprising an adhesive component and at least one terpene modifier, and its use in the production of creped paper products by a process which includes the steps of adhering a paper web to the surface of a drying cylinder and separating the paper web from the drying cylinder with a creping blade
SUMM The present invention relates generally to the manufacture of crepe paper products, and more particularly to a modified creping adhesive composition which facilitates the creping of paper

removing the water from the furnish. . .
DETD may be used as the adhesive component in the modified creping adhesive composition of this invention. These include, without limitation, polyamidoamine-epichlorohydrin resins, polyamide-epichlorohydrin resins, poly(diallylamine)-epichlorohydrin resins, polyalkylene polyamine-epichlorohydrin resins, the reaction product of an epichlorohydrin and an end-capped polyamine diamine polymer, polyalkenolamides, the reaction product of (a) a mixture of polyamide and at least one of polyvinyl alcohol and low molecular weight polyethyleneimine and (b) epichlorohydrin, poly(vinyl alcohol), poly(vinyl alcohol) copolymers, polyacrylamide, polymethacrylamide which may be partially hydrolyzed, poly(acrylic acid), poly(methacrylic acid), poly(hydroxyethyl acrylate), poly(hydroxyethyl methacrylate), poly(N-vinyl pyrrolidone), polyvinylamine, polyethylene-imine, poly(ethylene oxide), poly(ethylene glycol), ethylene-vinyl acetate copolymer, hydroxyethyl cellulose, hydroxypropyl cellulose, guar gum, starch, agar, alginic acid, chitosan, carboxymethyl cellulose, highly branched polyamidoamines, and silyl-linked polymers.
DETD The above-mentioned polyamidoamine-epichlorohydrin resins may, if desired, bear polyol side chains, as described in U.S. Pat. No., 6,165,322 to Bower.
DETD The above-mentioned polyamide-epichlorohydrin resins may be hydrophobically modified. Such modification can be achieved by reacting a polyamide-epichlorohydrin resin with an anionic polyelectrolyte, such as that made by reacting a polymeric compound having anhydride groups with a secondary. . .
DETD A preferred group of adhesive materials includes cationic polymers having azetidinium, epoxide or hydroxyl functionalities, for example, polyamide-epichlorohydrin resin, poly(diallylamine)-epichlorohydrin resin, polyalkylene polyamine-epichlorohydrin resin, polyamidoamine-epichlorohydrin resin, polyvinyl alcohol or silyl-linked polymers such as silyl-linked polyamidoamines, as well as polyacrylamide, poly(ethylene oxide), poly(ethylene glycol), hydroxyethylcellulose, hydroxypropylcellulose, . . .
DETD . . . that form hydrolyzable ionic cross-links with a suitable cross-linking agent. Cross-linking agents that can be used for this purpose are transition metal salts that provide ionic crosslinks between functional groups of the non-self-crosslinking polymer or oligomer. Zirconium salts have been found to be particularly useful cross-linking agents, with ammonium zirconium carbonate and potassium. . .
DETD . . . polyvinyl alcohol, poly(acrylic acid), poly(methacrylic acid), partially hydrolyzed polyacrylamide, partially hydrolyzed polymethacrylamide, carboxymethylcellulose, alginic acid and polysaccharides such as starch, cellulose and cellulose derivatives, agar and guar gum. Further details regarding the preparation of creping adhesives comprising non-self-crosslinkable polymers or oligomers and transition metal-crosslinking agents are provided in U.S. Pat. No. 5,370,773 to Luu et al.
DETD . . . least one synthetic, natural or synthetically modified natural water soluble polymer, oligomer or copolymer selected from the group consisting of polyamidoamine-epichlorohydrin resins, polyamide-epichlorohydrin resins, poly(vinyl alcohol), highly branched polyamidoamines, and silyl-linked polyamidoamines.
DETD Polyamide-epichlorohydrin resins suitable for use as an adhesive component of the above-described composition are commercially available as Unisoft 805 (Hercules Corp. . .

webs for making disposable and/or absorbent tissue, towels, napkins, or other paper products.
SUMM Paper is generally manufactured by suspending cellulosic fiber of appropriate geometric dimensions in an aqueous medium, forming the fiber into a wet ribbon or web on a porous support and then drying the web. In the manufacture of disposable. . . to impart desired aesthetic and performance properties to the resulting product. Creping is generally carried out by causing the cellulosic fiber web to adhere to the surface of a large, rotating cylindrical dryer, known in the industry as a Yankee dryer. . .
SUMM Traditionally, absorbent paper has been produced by one of three basic technologies: (i) conventional wet press technology with wet creping and embossing, as. . .
SUMM Typically, the paper web is first formed on a foraminous carrier or support, such as a Fourdrinier wire, where it is freed of the copious water needed to disperse the fibrous slurry. Thereafter, it is usually transferred to a felt or fabric in a so-called press section where de-watering is continued either by mechanically compacting the paper or by some other de-watering method such as through-drying with hot air, before finally being transferred in the semi-dry condition to the surface of the Yankee. . .
SUMM The impact of the adhered web with the doctor blade is essential in order to obtain from the drying process a dried paper web having the properties desired by the manufacturer. This creping action has the effect of breaking a substantial number of interfiber bonds in the paper web, increasing its bulk, and resulting in improved softness and absorbency. The term "bulk," as used herein, refers to the inverse of the density of a tissue paper web. The paper web is caused to adhere to the Yankee dryer well around the cylindrical heating surface from the doctor blade, which. . .
SUMM . . . example, a facial tissue web will require a different level of adhesion and tack and rewetability in comparison to a paper towel web. Webs which are not sufficiently adhered to the dryer tend be difficult to control, with consequent difficulties in forming a uniform reel of paper. A loose sheet leads to poor creping, wrinkles in the reel, holdovers, or weaving of the sheet in the rolled-up paper, which can lead to problems in converting. Hence it is very important to be able to control the level of. . .
SUMM Various types of creping adhesives are known. Some unmodified adhesives, such as polyamidoamine-epichlorohydrin (PAAE) and polyvinyl alcohol (PVOH) tend to form a very hard coating with poor tack and rewetability properties. It is. . .
SUMM . . . adhesive providing enhanced performance with respect to level of adhesion, tack and rewetability remains a highly desired objective in the paper industry.
SUMM The present invention also provides an improved method of making crepe paper products. The method of the invention entails causing a web of paper-making fibers to adhere against the surface of a rotating cylindrical dryer and separating the web from the surface by a. . .
DRWD The sole drawing figure is a schematic illustration of a process for the production of crepe paper products which utilizes the modified creping adhesive composition of the present invention.
DETD The disposable and/or absorbent tissues, towels, napkins and the like described herein are all paper products in sheet form made by a creping process which, in its basic operation, involves the steps of forming an aqueous paper-making furnish, depositing the furnish on a foraminous surface, such as a Fourdrinier wire, and

Referring to the drawing figure, there is illustrated a conventional crepe wet-forming process for the production of tissue paper. This process includes the steps of forming a fibrous web, applying a creping adhesive to the surface of a Yankee dryer causing. . . the dryer surface, removing the fibrous web from the dryer by use of a doctor blade and winding the dry fiber onto a roll. Alternatively, the creping adhesive can be applied to the surface of the fibrous web that will contact. . .
DETD As shown in the drawing figure, the carrier fabric 5 carries the formed, semi-dry web 10 to the nip between the rotating, cylindrical Yankee dryer 30 and pressure roll. . .
DETD . . . the present invention can be applied to promote adhesion and thereby influence the crepe of the resulting product. Thus, the method of application of the adhesive to the dryer surface or the web itself is not restricted to spray applications, although spraying is generally the simplest method for adhesive application.
DETD is based on the dry weight of the creping adhesive (measured in pounds) relative to the dry weight of the paper web (measured in tons). Preferably, the amount of adhesive composition applied is in the range of about 0.5 pounds per. . .
DETD Many fiber types may be used for the present invention including hardwood or softwoods, straw, flax, abaca, hemp, kenaf, bagasse, cotton, reed, . . . the like. All known papermaking fibers may be used, including bleached and unbleached fibers, fibers of natural origin (including wood fiber and other cellulosic fibers, cellulose derivatives, and chemically stiffened or crosslinked fibers) or synthetic fibers (synthetic papermaking fibers include certain forms of fibers made from . . . pulping processes), thermomechanically pulped, chemithermo-mechanically pulped, and the like. The mixtures of any subset of the above mentioned or related fiber classes may be used. The fibers can be prepared in a multiplicity of ways known to be advantageous in the. . .
DETD . . . production. Such additives include opacifiers, pigments, wet strength agents, dry strength agents, softeners, emollients, humectants, waxes, fluoropolymers, odor control materials and deodorants, zeolites, dyes, fluorescent dyes or whiteners, perfumes, deodorants, vegetable and mineral oils, humectants, sizing agents, superabsorbents. . .
DETD The present invention may be used to advantage for the production of final products such as a napkin, a tissue paper, a feminine hygiene product, a medical pad, a placemat, a protective cover-sheet material, a liquid absorbent material or a filter. . .
DETD . . . to those skilled in the art from the foregoing disclosure. For example, the present invention may be applied in various paper-making processes, including conventional wet pressing techniques, with wet or dry creping and embossing or TAD, with creping, as previously noted. . .
CLM What is claimed is:
2. The method of claim 1, wherein said at least one modifier component comprises a monoterpene.
 . . . least one synthetic, natural or synthetically modified natural water soluble polymer, oligomer or copolymer, selected from the group consisting of polyamidoamine-epichlorohydrin resins, said polyamidoamine-epichlorohydrin resin optionally bearing polyol side chains, polyamide-epichlorohydrin resins, said polyamide-epichlorohydrin resins being optionally hydrophobically modified, poly(diallylamine)-epichlorohydrin resins, polyalkylene polyamine-epichlorohydrin resins, the reaction

product of an epichlorohydrin and an end-capped polyaminamide polymer, polyalkanolamides, the reaction product of (a) a mixture of polyamide and at least one of polyvinyl alcohol and low molecular weight polyethyleneimine and (b) epichlorohydrin, poly(vinyl alcohol), poly(vinyl alcohol) copolymers, polyacrylamide which may be partially hydrolyzed, polymethacrylamide which may be partially hydrolyzed, poly(acrylic acid), poly(methacrylic acid), poly(hydroxyethyl acrylate), poly(hydroxyethyl methacrylate), poly(N-vinyl pyrrolidinone), polyvinylamine, polyethyleneimine, poly(ethylene oxide), poly(ethylene glycol), ethylene-vinyl acetate copolymer, hydroxyethyl cellulose, hydroxypropyl cellulose, guar gum, starch, agar, alginic acid, chitosan, carboxymethyl cellulose, highly branched polyamidoamines, and silyl-linked polymers.

least one synthetic, natural or synthetically modified natural water soluble polymer, oligomer or copolymer selected from the group consisting of polyamidoamine-epichlorohydrin resins, polyamide-epichlorohydrin resins, poly(diallylamine-epichlorohydrin resins), polyalkylene polyamine-epichlorohydrin resins, poly(vinyl alcohol), highly branched polyamidoamines, silyl-linked polyamidoamines, polyacrylamide, poly(ethylene oxide), poly(ethylene glycol), hydroxyethyl cellulose, hydroxypropyl cellulose, carboxymethyl cellulose and guar gum.

a non-self-crosslinkable polymer or oligomer, having functional groups that can be crosslinked by forming hydrolyzable ionic crosslinks, and a metallic crosslinking agent for said polymer or oligomer.

9. The modified creping adhesive composition of claim 8, wherein said crosslinking agent is a zirconium-containing salt.

10. The modified creping adhesive composition of claim 9, wherein said crosslinking agent is selected from the group consisting of ammonium zirconium carbonate and potassium zirconium carbonate.

least one synthetic, natural or synthetically modified natural water soluble polymer, oligomer or copolymer selected from the group consisting of polyamidoamine-epichlorohydrin resins, polyamide-epichlorohydrin resins, poly(vinyl alcohol), highly branched polyamidoamines, and silyl-linked polyamidoamines.

15. The modified creping adhesive composition of claim 1, further comprising at least one paper-making additive.

18. An improved method of making crepe paper products by pressing a web of paper-making fibers against the surface of a rotating cylindrical dryer and separating said web from said surface by a creping blade.

19. The method of claim 18, wherein the modified creping adhesive composition applied to said rotating cylindrical dryer comprises at least one synthetic natural or synthetically modified natural water soluble polymer or copolymer, selected from the group consisting of polyamidoamine-epichlorohydrin resins, said polyamidoamine-epichlorohydrin resin optionally bearing polyol side chains, polyamide-epichlorohydrin resins, said polyamide-epichlorohydrin resins being optionally hydrophobically modified, poly(diallylamine)-epichlorohydrin resins, polyalkylene polyamine-epichlorohydrin resins, the reaction

product of an epichlorohydrin and an end-capped polyaminamide polymer, water-soluble polyalkanolamides, the reaction product of (a) a mixture of polyamide and at least one of polyvinyl alcohol and low molecular weight polyethyleneimine and (b) epichlorohydrin, poly(vinyl alcohol), poly(vinyl alcohol) copolymers, polyacrylamide which may be partially hydrolyzed, polymethacrylamide which may be partially hydrolyzed, poly(acrylic acid), poly(methacrylic acid), poly(hydroxyethyl acrylate), poly(hydroxyethyl methacrylate), poly(N-vinyl pyrrolidinone), polyvinylamine, polyethyleneimine, poly(ethylene oxide), poly(ethylene glycol), ethylene-vinyl acetate copolymer, hydroxyethyl cellulose, hydroxypropyl cellulose, guar gum, starch, agar, alginic acid, chitosan, carboxymethyl cellulose, highly branched polyamidoamines, and silyl-linked polymers.

20. The method of claim 19, wherein said modified creping adhesive composition is applied in an amount in the range from about 0.1.

21. The method of claim 20, wherein said modified creping adhesive composition is applied in an amount in the range from about 0.5.

22. A crepe paper product produced by the method of claim 18.

23. The crepe paper product of claim 22, in a form selected from the group consisting of a napkin, a tissue paper, a feminine hygiene product, a medical pad, a placemat, a protective cover-sheet material, a liquid absorbent sheet material or a web of paper-making fibers having on the surface thereof a modified creping adhesive composition as claimed in claim 1.

L23 ANSWER 6 OF 70 USPTATFULL on STN
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CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to novel hydrophilic swellable addition polymers comprising improved odor control, a process for their preparation and their use for absorbing aqueous fluids and a process for screening superabsorbents.

SUMM The present invention relates to novel hydrophilic swellable addition polymers comprising improved odor control, their preparation and their use for absorbing aqueous fluids and also a process for screening superabsorbents.

SUMM . . . gel, cosmetic thickeners, sunscreen; thickeners for oil/water or water/oil emulsions; textiles (gloves, sportswear, moisture regulation in textiles, shoe inserts); chemical process industry applications (catalyst for organic reactions, immobilization of large functional molecules (enzymes), adhesive for agglomerations, heat storage media, filtration aids, . . . hygiene articles, superabsorbents are generally positioned in an absorbent core which, as well as SAP, comprises other materials, including fibers (cellulose fibers), which act as a kind of liquid buffer to intermediately store the spontaneously applied liquid insults and are intended. . .

SUMM The current trend in diaper design is toward ever thinner constructions having a reduced cellulose fiber content and an increased hydrogel content. The trend toward ever thinner diaper constructions has substantially changed the performance profile required. . .

SUMM . . . for example pressure due to the bodyweight of the wearer of the hygiene article, and clog the pores in the SAP/cellulose fiber absorbent and so prevent continued absorption of fluid. Enhanced gel strength is generally obtained through a higher degree of crosslinking, although this reduces retention performance. An elegant way to enhance gel strength is surface postcrosslinking. In this process, dried superabsorbents having an average crosslink density are subjected to an additional crosslinking step. The process is known to one skilled in the art and described in EP-A-0 349 240. Surface postcrosslinking increases the crosslink density. . .

SUMM . . . present, for example, amines, acids, aldehydes, ketones, phenols, polycyclics, indoles, aromatics, polyaromatics, etc., that are responsible for unpleasant body odors. Odor development takes place in two stages, first in the course of exudation from the body region and then when the fluid has already been present in the absorption medium for a defined time. Both odor factors have to be eliminated, since it is undesirable for cost reasons to change the hygiene article after every absorption process. . .

SUMM The literature on odor control in the hygiene sector reveals the following approaches:
Odor control coupled with simultaneous absorption by addition of inert inorganic substances having a large surface area, generally as a solid. . .

SUMM Addition of substances capable of complexing with organic molecules or with metal ions present in the body fluid to prevent the development of unpleasant odors. This preferably takes the form of the . . . composition. Cyclodextrins are added in small particle size (usually less than 12 µm) to offer a large surface area for odor elimination. Further complexing agents are aminopolycarboxylic acids and their salts, ethylenediaminetetraacetate

EDTA ethylenediaminepentamethylenephosphonic acid, ethylenediaminetetramethylenephosphonic acid, aminophosphates, polyfunctional aromatics, N,N-disuccinic. . .
SUMM . . . inhibitors to control the formation or activity of enzymes responsible for the cleavage of urea into ammonia and hence for odor development.

SUMM Addition of antimicrobial substances. Enzymes control bacterial growth and thereby minimize odor development due to bacterial degradation processes (e.g., oxidoreductase-mediated). Examples of antimicrobial substances include quaternary ammonium compounds, phenols, amides, acids and . . .
SUMM . . . chlorhexidine gluconate, triclosan.

Use of microcapsules which release the active substance on contact with moisture.

Use of transition metal compounds (Cu, Ag, Zn).

SUMM As well as the classes of compounds mentioned, useful odor control compounds further include the following: peroxides, bicarbonate, triclosan, plant extracts, etheral oils, boron compounds, poly-alpha-amino acids (polylysine), imides, polyimides, . . .

SUMM In general, however, the addition of odor inhibitors will have an adverse effect on the absorption profile of superabsorbent hydrogels. The separate installation of the odor-inhibiting or deodorizing component system and of the superabsorbent material in the hygiene article generally reduces the absorption capacity. Combinations generally. . .

SUMM Odor control on using acidic hydrogels in hygiene articles is good. However, they exhibit a worse absorption profile than is the. . .

SUMM . . . from 60 to 80 mol %, based on the polymerized acid-functional monomer units. However, it was found with regard to odor control that a higher pH will generally favor bacterial growth. In the process, the urea in the urine is increasingly split by urease into carbon dioxide and urea, which leads a further increase. . .

SUMM The manufacturing process of completely acidic hydrogel forming monomers is known and has been repeatedly described in the literature. EP 205 674 A1 . . . polymerization of the monomer solution as shown in EP 467 073 A1 proceeds very slowly, so that only a batch process is possible. Increasing the amount of initiator or raising the polymerization temperature has an adverse effect on the absorption profile of the hydrogels. Moreover, there are appreciable problems during the manufacturing process with the subdivision of the completely acidic polymer gel, and the neutralization which is carried out subsequently merely takes place. . .

SUMM . . . are lastly adjusted to the desired degree of neutralization following the polymerization. For instance, DE 195 29 348 reports a process wherein the monomer solution is 5-30 mol %, preferably 5-20 mol % and particularly preferably 5-10 mol % neutralized, based. . . addition polymer is further neutralized until at least 50 mol % of the acid groups present therein are neutralized. This process provides addition polymers having a high retention value and a high sorbency under constant and increasing pressure and also having a low level of extractables. EP 0 583 178 B1, in contrast, proposes a process for preparing superabsorbent powders consisting of partially neutralized polyacrylic acids by a sequential inverse suspension polymerization of two charges having. . .

SUMM . . . all the absorption profile advantages of the optimized skin pH neutral superabsorbent on acidic addition polymers, so that a distinct odor control unit is required in each case.

SUMM It is an object of the present invention to provide modified

superabsorbents (and a process for their preparation) which when used in hygiene articles comprise improved odor inhibition coupled with the excellent absorption profile on the part of the superabsorbent hydrogel material. This hydrogel material shall preferably, . . . without exhibiting the adverse effect of gel blocking. The high absorption performance sought shall not be substantially impaired by the odor control system, as has heretofore been the case in the prior art with odor control in the hygiene sector.

SUMM . . . use of acidic superabsorbent hydrogels of the above degree of neutralization where preferably no further substances have been added for odor inhibition. Surprisingly, furthermore, we have developed a parameter to quantify the absorption profile--namely the pH absorbency index PH.sub.AI--which permits an informative assessment of newly developed hydrogel material. Furthermore, the PH.sub.AI parameter makes it possible to provide a simple test method for screening and optimizing new materials by summarizing and weighting the relevant characteristics of the superabsorbents.

SUMM The invention accordingly provides a process for screening superabsorbents which comprises determining or estimating the pH, CRC and AUL 0.7 psi of a plurality of absorbent samples and determining or estimating the pH absorbency index therefrom. Repeated (iterative) application of this screening process by varying one or more opposing or nonopposing parameters makes it possible to optimize the superabsorbent through varied production processes from each measurement of the pH absorbency index. The novel superabsorbents optimized by this process are likewise claimed. A method for determining the swellability of polymer gels under pressure is described in PCT/EP/01/12959 and can be appropriately adapted. The disclosure. . .

SUMM It has been determined that conventional commercial hydrogel material without any odor control has a summation factor in the range from 55 to 80, predominantly from 60 to 70.

SUMM Acidic hydrogel material according to the invention, in contrast, comprises complete odor control due to effective control of bacterial growth and high absorption performance coupled with a summation factor of above 100, . . .

SUMM . . . particular polymers of (co)polymerized hydrophilic monomers, graft (co)polymers of one or more hydrophilic monomers on a suitable grafting base, crosslinked cellulose or starch ethers, crosslinked carboxymethylcellulose, partially crosslinked polyalkylene oxide or natural products that swell in aqueous fluids, for example guar. . .

SUMM Suitable grafting bases can be of natural or synthetic origin. Examples are starch, cellulose or cellulose derivatives and also other polysaccharides and oligosaccharides, polyvinyl alcohol, polyalkylene oxides, especially polyethylene oxides and polypropylene oxides, polyamines, polyamides and. . .

SUMM Preferred hydrogel-forming polymers are crosslinked polymers having acid groups which are predominantly in the form of their salts, generally alkali metal or ammonium salts. Such polymers swell particularly strongly on contact with aqueous fluids to form gels.

SUMM Preference is given to polymers which are obtained by crosslinking polymerization or copolymerization of acid-functional monoethylenically unsaturated monomers or salts thereof. It is further possible to copolymerize these monomers without. . .

SUMM . . . given to crosslinked polymers of monoethylenically unsaturated monomers which bear acid groups and which are optionally converted into their alkali metal or ammonium salts before or after polymerization and of 0-40% by weight, based on their total weight, of monoethylenically unsaturated. . .

is that approximately the same degree of crosslinking is achieved.

SUMM Especial preference is given to a gel prepared by polymerization of partially neutralized acrylic acid with a crosslinking agent, wherein

(i) the partial neutralization can be effected using NaOH 50%: 20-30 mol % based on acrylic. . . 25.2 mol % based on acrylic acid, a corresponding neutralization can also be achieved with other neutralizing agents,

the crosslinking can be effected using polyethylene glycol 400 diacrylate: 0.005-1.0% by weight based on acrylic acid, preferably 0.1-0.4% by weight, particularly. . . especially about 0.2% by weight based on acrylic acid;

or some other crosslinker which produces the same degree of crosslinking, or

(ii) the partial neutralization can be effected using NaHCO.sub.3:

SUMM . . . weight based on acrylic acid, a corresponding neutralization can also be achieved with other neutralizing agents,

the crosslinking can be effected using allyl methacrylate: 0.005-1.0% by weight based on acrylic acid, preferably 0.1-0.5% by weight, particularly preferably 0.2-0.4%. . . especially about 0.3% by weight based on acrylic acid;

or some other crosslinker which produces the same degree of crosslinking, or

(iii) the partial neutralization can be effected using LiOH.H.sub.2O: 15-30% by weight based on acrylic acid, preferably. . . 20.4% by weight based on acrylic acid, a corresponding neutralization can also be achieved with other neutralizing agents,

the crosslinking can be effected using allyl methacrylate: 0.005-1.0% by weight based on acrylic acid, preferably 0.1-0.6% by weight, particularly preferably 0.3-0.5%. . . especially about 0.4% by weight based on acrylic acid;

or some other crosslinker which produces the same degree of crosslinking, or

(iv) the partial neutralization can be effected using NaHCO.sub.3: 35-55% by weight based on acrylic acid, preferably. . . 41 to 45% by weight, especially about 43% by weight based on acrylic acid additionally to acrylic acid,

the crosslinking can be effected using allyl methacrylate: 0.005-1.0% by weight based on acrylic acid, preferably 0.1-0.6% by weight, particularly preferably 0.3-0.5%. . . 50 mol % based on acrylic acid, a corresponding neutralization can also be achieved with other neutralizing agents,

the crosslinking can be effected using ETMPTA: 0.005-1.0% by weight based on acrylic acid, preferably 0.1-0.4% by weight, particularly preferably 0.03-0.2% by. . . 50 mol % based on acrylic acid, a corresponding neutralization can also be achieved with other neutralizing agents,

the crosslinking can be effected using polyethylene glycol 400 diacrylate: 0.005-1.1% by weight based on acrylic acid, preferably 0.1-1.0% by weight, particularly. . . weight, especially about 45% by weight, based on acrylic acid, or some other crosslinker which produces the same degree of crosslinking.

SUMM To effect surface postcrosslinking, compounds capable of reacting with

SUMM Preference is given to crosslinked polymers of monoethylenically unsaturated C.sub.3- to C.sub.12-carboxylic acids and/or their alkali metal or ammonium salts. Preference is given in particular to crosslinked polyacrylic acids where 5-30 mol %, preferably 5-20 mol %. . . particularly preferably 5-10 mol % of their acid groups, based on the monomers containing acid groups, are present as alkali metal or ammonium salts.

SUMM . . . ethylene oxide with 1 mol of glycerol, pentaerythritol triallyl ether and/or divinylurea. This invention refers to the same degree of crosslinking when the molar ratios between acid-functional monomers and crosslinkers remain constant with regard to ethylenically unsaturated double bonds.

SUMM . . . glycol diglycidyl ether and polypropylene glycol diglycidyl ether, polyaziridine compounds such as 2,2-bis(hydroxymethyl)butanol tris[3-(1-aziridinyl)propionate], 1,6-hexamethylenediethylenurea, diphenylmethanebis-4,4'-(N,N'-diethylenurea), haloeпоxy compounds such as epichlorohydrin and α -methyl ϵ pifluorohydrin, polyisocyanates such as 2,4-tolylene diisocyanate and hexamethylene diisocyanate, alkylene carbonates such as 1,3-dioxolan-2-one and 4-methyl-1,3-dioxolan-2-one, also bisoxazolines and oxazolidones, polyamidoamines and also their reaction products with epichlorohydrin, also polyquaternary amines such as condensation products of dimethylamine with epichlorohydrin, homo- and copolymers of diallyldimethylammonium chloride and also homo- and copolymers of dimethylaminoethyl (meth)acrylate which are optionally quaternized with, for. . .

SUMM Useful crosslinkers further include multivalent metal ions capable of forming ionic crosslinks. Examples of such crosslinkers are magnesium, calcium, barium and aluminum ions. These crosslinkers are. . .

SUMM . . . one of the above-specified per compounds and the reducing component is for example ascorbic acid, glucose, sorbose, ammonium or alkali metal bisulfite, sulfite, thiosulfate, hyposulfite, pyrosulfite or sulfide, or a metal salt, such as iron(II) ions or sodium hydroxymethylsulfoxylate. The reducing component in the redox catalyst is preferably ascorbic acid or. . .

SUMM . . . the range from 20 to 30 mol %, based on the monomers containing acid groups. Useful neutralizing agents include alkali metal bases or ammonia/amines. Preference is given to the use of aqueous sodium hydroxide solution, aqueous potassium hydroxide solution or lithium. . .

SUMM . . . glycol 400 diacrylate): 0.2-0.5% by weight based on acrylic acid; what is decisive is that approximately the same degree of crosslinking is achieved.

SUMM . . . glycol 400 diacrylate): 0.2-0.5% by weight based on acrylic acid; what is decisive is that approximately the same degree of crosslinking is achieved.

SUMM . . . glycol 400 diacrylate): 0.2-0.5% by weight based on acrylic acid; what is decisive is that approximately the same degree of crosslinking is achieved.

SUMM . . . glycol 400 diacrylate): 0.2-0.5% by weight based on acrylic acid; what is decisive is that approximately the same degree of crosslinking is achieved.

SUMM . . . other crosslinkers having at least 2 ethylenically unsaturated double bonds; what is decisive is that approximately the same degree of crosslinking is achieved.

SUMM Useful crosslinking agents further include other crosslinkers having at least 2 ethylenically unsaturated double bonds, such as for example ETMPTA (ethoxylated trimethylolpropane. . . glycol 400 diacrylate): 0.2-0.5% by weight based on acrylic acid; what is decisive

the functional groups of the polymers by crosslinking are applied to the surface of the hydrogel particles, preferably in the form of an aqueous solution. . .

SUMM The subsequent crosslinking reacts polymers which have been prepared by the polymerization of the abovementioned monoethylenically unsaturated acids and optionally monoethylenically unsaturated comonomers. . .

SUMM . . . aziridine compounds based on polyethers or substituted hydrocarbons, for example bis-N-aziridinomethane, polyamines or polyamidoamines and their reaction products with epichlorohydrin,

polyols such as ethylene glycol, 1,2-propanediol, 1,4-butanediol, glycerol, methyltriglycol, polyethylene glycols having an average molecular weight M.sub.w of 200-10. . .

SUMM Particularly suitable postcrosslinkers are di- or polyglycidyl compounds such as ethylene glycol diglycidyl ether, the reaction products of polyamidoamines with epichlorohydrin and 2-oxazolidinone.

SUMM on the outer shell of the hydrogel particles is effected by spraying with solutions of divalent or more highly valent metal salt solutions, and the metal cations can react with the acid groups of the polymer to form complexes. Examples of divalent or more highly valent metal cations are Mg.sup.2+, Ca.sup.2+, Al.sup.3+, Sc.sup.3+, Ti.sup.4+, Mn.sup.2+, Fe.sup.2+/3+, Co.sup.2+, Ni.sup.2+, Cu.sup.+2/, Zn.sup.2+, Y.sup.3+, Zr.sup.4+, Ag.sup.+, La.sup.3+, Ce.sup.4+, Hf.sup.4+, and Au.sup.+3/, preferred metal cations are Mg.sup.2+, Ca.sup.2+, Al.sup.3+, Ti.sup.4+, Zr.sup.4+ and La.sup.3+ and particularly preferred metal cations are Al.sup.3+, Ti.sup.4+ and Zr.sup.4+. The metal cations may be used not only alone but also mixed with each other of the metal cations mentioned, all metal salts are suitable that possess adequate solubility in the solvent to be used. Of particular suitability are metal salts with weakly complexing anions such as for example chloride, nitrate and sulfate. Useful solvents for the metal salts include water, alcohols, DMF, DMSO and also mixtures thereof. Particular preference is given to water and water-alcohol mixtures such as. . .

SUMM The spraying of the metal salt solution onto the particles of the hydrogel-forming polymer may be effected not only before but also after the surface postcrosslinking of the particles. In a particularly preferred process, the spraying of the metal salt solution takes place in the same step as the spraying with the crosslinker solution, the two solutions being sprayed separately in succession or simultaneously via two nozzles or the crosslinker and metal salt solutions may be sprayed conjointly through a single nozzle.

SUMM . . . surface area of 50-450 m.sup.2/g. The admixture of finely divided inorganic solids preferably takes place after the surface modification through crosslinking/complexing, but may also be carried out before or during these surface modifications.

SUMM The inventive acidic hydrogel forming polymers capable of absorbing aqueous fluids comprise improved odor control properties as well as high ultimate absorption capacity, high gel strength and permeability and also high retention. Owing to the presence of acidic hydrogel forming polymers, the products of the invention have antimicrobial properties, thereby providing an odor control system without the need for the addition of odor inhibiting substances or odor masking materials.

SUMM In contrast to the prior art, where an added odor control unit is indispensable for the use of superabsorbent polymers in the

hygiene sector, the products of the invention permit substantially less costly manufacture, since as well as there being no need for an odor control unit there is no need either for binders or other aids for binding an odor control unit to hydrogel forming polymers.

SUMM The reduction or preferably the elimination of additives for odor control purposes results in no changes to the high absorption performance and no changes to the excellent absorption behavior of . . .

SUMM . . . and comprising 10-100% by weight of the hydrogel forming polymer according to the invention

0-90% by weight of hydrophilic fiber material preferably 20-100% by weight of the inventive hydrogel forming polymer, 0-80% by weight of hydrophilic fiber material

more preferably 30-100% by weight of the inventive hydrogel forming polymer, 0-70% by weight of hydrophilic fiber material

even more preferably 40-100% by weight of the inventive hydrogel forming polymer, 0-60% by weight of hydrophilic fiber material

much more preferably 50-100% by weight of the inventive hydrogel forming polymer, 0-50% by weight of hydrophilic fiber material

particularly preferably 60-100% by weight of the inventive forming polymer, 0-40% by weight of the hydrophilic fiber material

especially preferably 70-100% by weight of the inventive hydrogel forming polymer, 0-30% by weight of the hydrophilic fiber material

extremely preferably 80-100% by weight of the inventive hydrogel forming polymer, 0-20% by weight of the hydrophilic fiber material

most preferably 90-100% by weight of the inventive hydrogel forming polymer, 0-10% by weight of the hydrophilic fiber material

(D) optionally a tissue layer positioned directly above and below said core (C) and

(E) optionally. . .

SUMM . . . hydrogel forming polymer according to the invention and all in between (ages (for example 12.2%) are possible and correspondingly hydrophilic fiber material from 0 to respectively 89, 88, 87, 86, 85, 83, 82, 81% by weight and in between percentages (for example 87.8%) are possible. When further materials are present in the core, then the percentages of polymer and fiber are reduced correspondingly. The same applies to the preferred ranges, for example in the case of extremely preferably 81, 82, . . . forming polymer of the invention and correspondingly 19, 18, 17, 16, 15, 14, 13, 12, 11% by weight of the fiber material. So the preferred range contains 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 to 100% by weight. . .

SUMM The core (C) includes not only the hydrogel forming polymer of the invention but also hydrophilic fiber material. By hydrophilic is meant that aqueous fluids spread quickly over the fiber. The fiber material is usually a cellulose, modified cellulose, rayon, polyester such as polyethylene terephthalate. Particular preference is given to cellulose fibers such as pulp. The fibers generally have a diameter of 1-200 μ m, and preferably 10-100 μ m, and also have. . .

SUMM . . . and described in detail in the literature. A construction for installing the highly swellable hydrogels can be for example a fiber matrix consisting of a cellulose fiber mixture (air-laid web, wet laid web) or synthetic polymer fibers (meltblown web, spunbonded web) or else of a fiber blend of cellulose fibers and synthetic fibers. Possible fiber materials are detailed in the chapter which follows. The air-laid web process is described for example in WO 95/28478. Furthermore, open-celled foams or the like may be used to install highly swellable.

SUMM The highly swellable hydrogel particles are embedded into the fiber material described. This can be done in various ways, for example by using the hydrogel material and the fibers together to create an absorbent layer in the form of a matrix, or by incorporating highly swellable hydrogels into fiber mixture layers, where they are ultimately fixed, whether by means of adhesive or lamination of the layers.

SUMM The fluid-acquiring and -distributing fiber matrix may comprise synthetic fiber or cellulosic fiber or a mixture of synthetic fiber and cellulosic fiber, in which case the ratio may vary from (100 to 0) synthetic fiber: (0 to 100) cellulosic fiber. The cellulosic fibers used may additionally have been chemically stiffened to increase the dimensional stability of the hygiene article.

SUMM The chemical stiffening of cellulosic fibers may be provided in different ways. A first way of providing fiber stiffening is by adding suitable coatings to the fiber material. Such additives include for example polyamide-epichlorohydrin coatings (Kymene® 557 H, Hercules, Inc. Wilmington, Del.), polyacrylamide coatings (described in U.S. Pat. No. 3,556,932 or as the Parex® 631 NC commercial product from American Cyanamid Co., Stamford, Conn.), melamine-formaldehyde coatings and polyethyleneimine coatings.

SUMM Cellulosic fibers may also be chemically stiffened by chemical reaction. For instance, suitable crosslinker substances may be added to effect crosslinking taking place within the fiber. Suitable crosslinker substances are typical substances used for crosslinking monomers including but not limited to C.sub.2-C.sub.8-dialdehydes, C.sub.2-C.sub.8-sub.8-monooldehydes having acid functionality and in particular C.sub.2-C.sub.8-sub.9-polycarboxylic acids. Specific substances from this . . . glutaraldehyde, glyoxal, glyoxylic acid, formaldehyde and citric acid. These substances react with at least 2 hydroxyl groups within any one cellulose chain or between two adjacent cellulose chains within any one cellulose fiber. The crosslinking causes a stiffening of the fibers, to which greater dimensional stability is imparted as a result of this treatment. In . . .

SUMM Chemically crosslinked cellulose fibers are known and described in WO 91/11162, U.S. Pat. No. 3,224,926, U.S. Pat. No. 3,440,135, U.S. Pat. No. 3,932,209, . . . for 4,035,147, U.S. Pat. No. 4,822,453, U.S. Pat. No. 4,888,093, U.S. Pat. No. 4,898,642 and U.S. Pat. No. 5,137,537. The chemical crosslinking imparts stiffening to the fiber material, which is ultimately reflected in improved dimensional stability for the hygiene article as a whole. The individual layers are . . .

SUMM Examples of processes to obtain an absorbent composition comprising for example highly swellable hydrogels (c) embedded in a fiber material blend of synthetic fibers (a) and cellulose fibers (b), the blend ratio varying from (100 to 0) synthetic fiber: (0 to 100) cellulose fiber, include (1) a process where (a), (b) and (c) are mixed together at one and the same time, (2) a process where a mixture of (a) and (b) is mixed into (c), (3) a process where a mixture of (b) and (c) is mixed with (a), (4) a process where a mixture of (a) and (c) is mixed into (b), (5) a process where (b) and (c) are mixed and (a) is continuously metered in, (6) a process where (a) and (c) are mixed and (b) is continuously metered in, and (7) a process where (b) and (c) are mixed separately into (a). Of these examples, processes (1) and (5) are preferred. The apparatus used in this process is not particularly restricted and any

SUMM . . . The second layer may either be water pervious or water impervious. The layer material used may be tissues or other fabric, closed or open-celled foams, perforated films, elastomers or fabrics composed of fiber material. When the absorbent composition consists of a construction of layers, the layer material should have a pore structure whose. . .

SUMM Fiber Materials of the Absorbent Composition

SUMM The structure of the present composition according to the invention may be based on various fiber materials, which are used as a fiber network or matrices. The present invention includes not only fibers of natural origin (modified or unmodified) but also synthetic fibers.

SUMM Examples of cellulose fibers include cellulose fibers which are customarily used in absorption products, such as fluff pulp and cellulose of the cotton type. The materials (soft- or hardwoods), production processes such as chemical pulp, semichemical pulp, chemothermomechanical pulp (CTMP) and bleaching processes are not particularly restricted. For instance, natural cellulose fibers such as cotton, flax, silk, wool, jute, ethylcellulose and cellulose acetate are used.

SUMM . . . thermoplastic fibers. In the course of the heat treatment, the latter migrate to some extent into the matrix of the fiber material present and so constitute bond sites and renewed stiffening elements on cooling. Additionally the addition of thermoplastic fibers means. . . C., preferably in the range from 75° C. to 175° C. These temperatures are too low for damage to the cellulose fibers to be likely.

SUMM Lengths and diameters of the above-described synthetic fibers are not particularly restricted, and generally any fiber from 1 to 200 mm in length and from 0.1 to 100 denier (gram per 9 000 meters) in diameter. . . in length, particularly preferred thermoplastic fibers are from 6 to 12 mm in length. The preferred diameter for the thermoplastic fiber is in the range from 1.4 to 10 decitex, and the range from 1.7 to 3.3 decitex (gram per 10 000 meters) is particularly preferred. The form of the fiber may vary: examples include woven types, narrow cylindrical types, cut/chopped yarn types, staple fiber types and continuous filament fiber types.

SUMM . . . to the definition of Robert F. Gould in the 1964 American Chemical Society publication "Contact angle, wettability and adhesion", a fiber is referred to as hydrophilic when the contact angle between the liquid and the fiber (or the fiber surface) is less than 90° or when the liquid tends to spread spontaneously on the same surface. The two processes are generally consistent. Conversely, a fiber is termed hydrophobic when a contact angle of greater than 90° is formed and no spreading is observed.

SUMM Preference is given to using hydrophilic fiber material. Particular preference is given to using fiber material which is weakly hydrophilic on the body side and most hydrophilic in the region surrounding the highly swellable hydrogels. In the manufacturing process, layers having different hydrophilicities are used to create a gradient which channels impinging fluid to the hydrogel, where it is.

SUMM Suitable hydrophilic fibers for use in the absorbent composition of the present invention include for example cellulose fibers, modified cellulose fibers, rayon, polyester fibers, for example polyethylene terephthalate (DACRON®), and hydrophilic nylon (HYDROFIL®). Suitable hydrophilic fibers may also be obtained. . .

SUMM customary apparatus known to one skilled in the art can be used. The heat treatment process is not particularly restricted. Examples include heat treatment by feeding hot air or infrared irradiation. The temperature of the heat. . .

SUMM The duration of the heat treatment depends on the type of synthetic fiber, its amount and the hygiene article production rate. Generally the duration of the heat treatment is in the range from. . .

SUMM This method measures the free swellability of the hydrogel in a teabag. 0.2000±0.0050 g of dried hydrogel (particle size fraction 106-850 μ m). . .

SUMM . . . to be level with the filter plate surface without the surface of the filter plate being wetted. A round filter paper 90 mm in diameter and <20 μ m in pore size (545 589 Schwarzband from Schleicher & Schull) is subsequently placed. . . The Plexiglass cylinder containing hydrogel forming polymer is then placed with plastic plate and weight on top of the filter paper and left there for 60 minutes. At the end of this period, the complete unit is removed from the Petri. . .

SUMM The test method for determining SFC is described in U.S. Pat. No. 5 599 335.

SUMM a) Ammonia Determination for Odor Control

SUMM The ammonia nitrogen content is determined calorimetrically by the Nessler method. Urea eliminates ammonia under the action of urease: a yellow color develops to a degree proportional to the ammonia concentration.

SUMM . . . solution were admixed with 10 Al of urease solution. After 2 minutes nitrogen from ammonia was determined by the Nessler method.

DETD . . . solid gel is mechanically comminuted using a meat grinder. 150 g of the gel thus comminuted are placed in a metal cylinder having an internal diameter of 10 cm and a VA stainless steel wire mesh bottom, dried therein under a. . .

DETD . . . solid gel is mechanically comminuted using a meat grinder. 150 g of the gel thus comminuted are placed in a metal cylinder having an internal diameter of 10 cm and a VA stainless steel wire mesh bottom, dried therein under a. . .

DETD . . . extruded in an extruder having a 4 mm die plate to enlarge the surface area and subsequently dried on a metal plate having 3 mm holes for air circulation at a gel thickness of 2-4 mm at 160° C. for 45.

DETD The subsequent surface crosslinking is carried out with 4% by weight of a solution containing 1.5% of ethylene glycol diglycidyl ether (EGDGE--Nagase Chemicals Japan as Denacol Ex-810), 36.94% of propylene glycol and 61.56% of water by drying and crosslinking at 145° C for 60 min.

DETD . . . results of the ammonia nitrogen determination of the products having different pH values from the examples. Table 2 demonstrates the odor binding effect of acidic superabsorbent products.

TABLE 2

Example	pH	N.sub.2 from NH.sub.3 Nessler (Nessler) mg/l	value
1c	4.47.		
CLM	What is claimed is:		
	30. The polymer of claim 17 being an acrylic acid (co)polymer partially neutralized with an alkali metal, an alkaline earth metal, ammonium, or an amine salt.		

33. A method of permanently or temporarily binding an aqueous fluid comprising a step of contacting the aqueous fluid with an absorbent article. . . .

34. A hydrogel-forming polymer prepared by polymerizing a partially neutralized acrylic acid with a crosslinking agent to form a gel, wherein (i) partial neutralization is effected using 50% NaOH or an equivalent neutralizing agent; 20-30 mol % based on acrylic acid, and crosslinking is effected using polyethylene glycol 400 diacrylate: 0.005-1.0%, by weight, based on acrylic acid, or a different crosslinker that produces the same degree of crosslinking, or (ii) partial neutralization is effected using NaHCO₃.sub.3 or an equivalent neutralizing agent: 23-28%, by weight, based on acrylic acid, and crosslinking is effected using allyl methacrylate: 0.005-1.0%, by weight, based on acrylic acid, or a different crosslinker that produces the same degree of crosslinking, or (iii) partial neutralization is effected using LiOH.H₂O.sub.20 or an equivalent neutralizing agent: 15-30%, by weight, based on acrylic acid, and crosslinking is effected using allyl methacrylate: 0.005-1.0%, by weight, based on acrylic acid, or a different crosslinker that produces the same. . . . by weight, based on acrylic acid, when 2-acryl-amido-2-methylpropanesulfonic acid is present at 30-55%, by weight, based on acrylic acid, and crosslinking is effected using allyl methacrylate: 0.005-1.0%, by weight, based on acrylic acid, or a different crosslinker that produces the same degree of crosslinking.

37. A hydrogel-forming polymer having a pH absorbency index pH.sub.AI of at least 80 and prepared by the method of claim 35.

10% to 100%, by weight, of the hydrogel-forming polymer of claim 17 and 0% to 90%, by weight, of hydrophilic fiber material, (D) optionally a tissue layer positioned directly above and below said core (C), and (E) optionally an acquisition layer. . . .

L23 ANSWER 7 OF 70 USPATFULL ON STN
ACCESSION NUMBER: 2005:238709 USPATFULL Full-text
TITLE: Recording method using ink containing an aqueous dispersion of microparticles containing an oil-soluble compound
INVENTOR(S): Ikeda, Kenji, Shizuoka-ken, JAPAN
PATENT ASSIGNEE(S): FUJII PHOTO FILM CO., LTD. (non-U.S. corporation)

NUMBER	KIND	DATE
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US 2005-84098	A1	20050321 (11)

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NUMBER	DATE
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UTILITY
APPLICATION
SUGHRUE MION, PLLC, 2100 PENNSYLVANIA AVENUE, N.W.,
SUITE 800, WASHINGTON, DC, 20037, US
20
1
2 Drawing Page(s)
3853

is superior in. . . in ejection stability causing no clogging at the tip of nozzles; superior in ink penetration even when the photographic quality paper described above is used; provides images superior in water resistance after printing, in particular superior in the stability and the. . . .

SUMM The present invention has been accomplished in consideration of the above conventional problems. Accordingly, the invention provides a recording method comprising recording an image on a recording medium having formed thereon an ink-receiving layer containing a polymer microparticle and subjecting. . . to a heating treatment, wherein an ink composition having a microparticle dispersion which contains an oil-soluble compound is used recording method enabling recording of an image with reduced ink bleeding and superior in water resistance, abrasion resistance, light fastness, and ozone. . . .

DETD Hereinafter, the recording method according to the invention will be described in detail.

DETD The recording method according to the invention comprises recording an image on a recording medium having an ink-receiving layer containing at least a recording medium. In the following, the ink composition and the recording medium will be described fist, after which the recording method according to the invention will be described.

DETD . . . chromophore part thereof is dissociated. The counter cation in this case may be an inorganic cation such as an alkali metal or ammonium, an organic cation such as pyridinium or a quaternary ammonium salt, or a polymer cation having these cations. . . .

DETD The compounds represented by Formula (II) above can be synthesized by reference to a method described in e.g. JP-A-126772, JP-B 7-94180 and Japanese Patent Application No. 2000-78451.

DETD . . . or C(R.sup.11).dbd., and 2b and 2c each independently represent --N.dbd. or C(R.sup.11).dbd., and R.sup.11 represents a hydrogen atom or a non-metal substituent group. R.sup.6 represents a heterocyclic group. ##STR1##

DETD . . . --N.dbd., --NH--, or C(R.sup.11).dbd.. 2b and 2c each independently represent --N.dbd. or C(R.sup.11).dbd.. R.sup.11 represents a hydrogen atom or a non-metal substituent. The non-metal substituent represented by R.sup.11 is preferably a cyano group, cycloalkyl group, aralkyl group, aryl group, alkylthio group, arylthio group or. . . .

DETD . . . represents a hydrogen atom, aliphatic group, aromatic group or heterocyclic group. In particular, Q is preferably a group consisting of non-metal atoms necessary for forming a 5- to 8-membered ring. The 5- to 8-membered ring may have a substituent, may be. . . have an unsaturated bond. In particular, the 5- to 8-membered ring is preferably an aromatic group or heterocyclic group. The non-metal atom is preferably a nitrogen atom, oxygen atom, sulfur atom or carbon atom. Preferable examples of the 5- to 8-membered. . . .

DETD M represents a hydrogen atom or a metal element, and the oxide, hydroxide or halide thereof.

DETD Preferable examples of M include a hydrogen atom and metal atoms such as Li, Na, K, Mg, Ti, Zr, V, Nb, Ta, Cr, Mo, W, Mn, Fe, Co, Ni, Ru. . . .

DETD M represents a hydrogen atom, a metal element, or an oxide, hydroxide or halide of the metal element, preferably represents Cu, Ni, Zn or Al, and most preferably represents Cu.

DETD M.sup.1 represents a hydrogen atom, a metal element, or an oxide thereof, a hydroxide of a metal element or a halide of a metal element.

DETD M.sup.1 represents a hydrogen atom or a metal element, and the oxide, hydroxide or halide thereof, more preferably Cu, Ni, Zn and

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

TI Recording method using ink containing an aqueous dispersion of microparticles containing an oil-soluble compound

AB The invention provides a recording method comprising recording an image on a recording medium having formed thereon an ink-receiving layer containing a polymer microparticle and heating. . . .

SUMM The invention relates to a recording method using an ink containing an aqueous dispersion of microparticles containing an oil-soluble compound.

SUMM Various recording methods for recording images on recording media such as paper are known. For example, an ink-jet recording method of forming a visible image by ejecting a liquid containing a solvent mainly of water with a coloring agent, dye or pigment, dissolved or dispersed therein onto a paper according to electrical signals is known. In addition, recording methods utilizing an electrophotographic process are known, specifically, dry and wet electrophotographic recording methods of visualizing an electrostatic latent image formed on a photoconductive photosensitive body by dry or wet development and transferring and fixing the visible image onto paper by electrostatic force, pressure, or heat. . . .

SUMM With the increasingly widespread use of computers in recent years, ink-jet printers are widely used for printing on paper, film and cloth not only in offices but also in homes. As inks used for ink-jet recording, oil-based inks, aqueous. . . inks and solid inks are known. Among these, aqueous inks are particularly advantageous in view of ease of production, handling, odor and safety, and hence are mainly used. . . .

SUMM . . . because the dye therein is water-soluble and easily generate ink bleeding, deteriorating the printing quality, especially when printed on plain paper, inferior in light fastness; and, when printed on a recording paper having an ink-receiving layer containing porous inorganic microparticles formed on the surface (hereinafter, referred to as "photographic quality paper"), vulnerable to oxidative gases (SO₂.sub.x, NO₂.sub.x, ozone, and the like), and thus the stability of stored images is extremely poor. . . .

SUMM . . . into photographic quality papers, and are thus disadvantageous in terms of easier exfoliation of the pigment or dye from the paper surface by abrasion by hand. . . .

SUMM Alternatively, a method of encapsulating an oil-soluble dye or pigment in a polymer has been proposed (e.g., JP-A No. 5845272). However, such inks. . . reproducibility, and image durability against oxidative gases and, further, in abrasion resistance of an image formed on a photographic quality paper. Further, an ink superior in color distinctness and abrasion resistance has been proposed (e.g., JP-A No. 62-241901), wherein a self-forming, abrasion by a finger, was not resistant to a higher level of abrasion such as eraser abrasion. Further, while a method of improving the color tone and abrasion resistance by employing a high-boiling point organic solvent and a dye has also been proposed, the method is unsatisfactory for use in printing when a high level of abrasion resistance is demanded. . . .

SUMM Alternatively, a method of fixing an inkjet image that provides images superior in glossiness and more resistant to bronzing has been proposed (e.g., JP-A No. 2003-48366). However, the fixing method has a problem that the properties of printed images varied according to fluctuations in the fixing period and the amount. . . .

SUMM As described above, there is currently no ink-jet recording method available that is superior in handling, odorlessness, and safety; contains dispersed particles having a smaller particle diameter, Al, and most preferably Cu. . . .

DETD . . . substituents Rn (n=1 to 4) and Yq (q=1 to 4) and the number of the substituents depending on its synthesis method, and the mixture of these analogues is in most cases expressed as a statistically averaged mixture. In the invention, when. . . .

DETD . . . group are introduced into the phthalocyanine nucleus, oxidation potential becomes higher, and ozone resistance is enhanced. When the above synthesis method is employed, the number of electron-withdrawing groups for increasing oxidation potential as conducted in the invention, the above synthesis method is superior to the method of synthesizing the compounds represented by Formula (C-I).

DETD Thus, if the synthesis method described above is employed, a specified number of desired substituents may be introduced. In particular, when it is desired to introduce a large number of electron-withdrawing groups for increasing oxidation potential as conducted in the invention, the above synthesis method is superior to the method of synthesizing the compounds represented by Formula (C-I).

DETD . . . more water-soluble and thus less suitable for dispersion of dye. The anionic dissociation group above may further contain an alkali metal (e.g. Na, K, and the like) or an ammonium ion forming a salt, and the cationic dissociation group an organic. . . .

DETD . . . an aqueous medium (solution at least containing water) in the colored microparticle form. Specifically, the methods include, for example, a method of preparing a latex of the hydrophobic polymer and then impregnating the oil-soluble compound therein, a coemulsifying dispersion method, and the like. . . .

DETD Among them, the coemulsifying dispersion method is preferable. A favorable example of the coemulsifying dispersion method is to add water to an organic solvent containing one of the dispersible polymers and one of the oil-soluble compounds. . . .

DETD . . . to remove the organic solvent from the standpoints of stability of the colored fine particle dispersion, safety and health. The method of removing the organic solvent may be conducted by any known methods depending on the kinds of solvents, and examples. . . .

DETD Specific examples of the inorganic alkali include alkali metal hydroxides (e.g., sodium hydroxide, lithium hydroxide, potassium hydroxide), carbonates (e.g., sodium carbonate, sodium bicarbonate) and ammonia. . . .

DETD . . . in the adsorption surface of the ink-receiving layer can be determined, for example, by measurement using the nitrogen gas adsorption method and calculating according to the B3H method. . . .

DETD . . . than the diameter of the polymer microparticles as determined from the micropore distribution curve obtained by the nitrogen gas adsorption method, by the dry film thickness B (μm) of the ink-receiving layer, is preferably 2.0 (+10.sup.-5 ml/cm.sup.2/μm) or more; and the. . . .

DETD . . . in the ink-receiving layer can be determined from the micropore distribution curve obtained by measuring by the nitrogen gas adsorption method and calculating according to the B3H method. . . .

DETD . . . the pore volume of the ink-receiving layer as determined from the micropore distribution curve obtained by the nitrogen gas adsorption method with respect to the diameter of polymer microparticle X(nm) is 65% or more and more preferably 70% or more. A. . . .

DETD . . . the polymer microparticle in the ink-receiving layer as determined from the micropore distribution curve obtained by the nitrogen gas adsorption method is 33 nm or more, preferably 35 nm or more, and particularly preferably 40 nm or more. If the micropore.

DETD These polymer microparticles are commonly obtained by an emulsion polymerization method. The surfactant, polymerization initiator, and others used therein may be selected suitably from those used in common methods. The preparation.

DETD . . . diameter of the polymer microparticles is preferably 10 to 100 nm and more preferably 15 to 80 nm. The glass transition temperature (T_g) of the polymer microparticle is not particularly limited; generally, harder polymer microparticles having a higher glass transition temperature are preferable, for prevention of deformation of the particles during application and drying; and thus the polymer microparticle may.

DETD . . . anionic modified polyvinyl alcohols, silanol-modified polyvinyl alcohols, polyvinylacetate, etc.), cellulosic resins (methylcellulose (MC), ethylcellulose (EC), hydroxyethylcellulose (HEC), carboxymethylcellulose (CMC), hydroxypropyl cellulose (HPC), hydroxyethyl methylcellulose, hydroxypropyl methylcellulose, etc.), chitins, chitosans, starch, resins having an ether bond (polyethylene oxide (PEO), polypropylene oxide (PPO)).

DETD . . . to have a sufficiently high layer strength for prevention of the cracking and exfoliation of ink-receiving layer during the cutting process into the sheet-like form.

DETD . . . the invention preferably is a coated film containing the water-soluble resin above which further contain a cross-linking agent capable of crosslinking the water-soluble resin, and an yet favorable embodiment thereof is a porous layer containing a polymer microparticle and a water-soluble resin that are hardened by the crosslinking reaction between the cross-linking agent and the water-soluble resin.

DETD Boron compounds are preferable for crosslinking the water-soluble resin, in particular polyvinyl alcohol.

DETD . . . boric acid, and borate salts are preferable and boric acid is particularly preferable from the viewpoint of the speed of crosslinking reaction.

DETD In addition to the boron compounds above, the following cross-linking agents may also be used for crosslinking the water-soluble resins.

DETD . . . as 1,6-hexamethylene-N,N'-bisethylene urea; halogenated carboxy aldehyde compounds such as mucochloric acid and mucophenoxychloric acid; dioxane compounds such as 2,3-dihydroxy dioxane; metal-containing compounds such as titanium lactate, aluminum sulfate, chrome alum, potash alum, zirconyl acetate, and chromium acetate;

DETD polyamine compounds such. . . In the invention, the crosslinking is carried out by adding a cross-linking agent to a coating solution containing a polymer microparticle and a water-soluble resin.

DETD . . . the cross-linking agent is added in the manner as follows: Namely, when the ink-receiving layer is a layer formed by crosslinking a coated film obtained by applying a coating solution containing a polymer microparticle and a water-soluble resin including polyvinyl alcohol (coating solution A), the crosslinking and hardening is carried out by forming a coated film by applying the coating solution, and adding a basic solution.

DETD Favorable examples of the polymer mordants include

polydiallyldimethylammonium chloride, polymethacryloyloxyethyl-β-hydroxyethylidimethylammonium chloride, polyethylenimine, polyallylamine and the derivatives thereof, polyamide-polyamine resins, cationic starch, dicyandiamide formaline condensates, dimethyl-2-hydroxypropylammonium salt polymers, polyamide, polyvinylamine, dicyandiamide-formaline polycondensates represented by dicyan-based cationic resins, dicyanamide-ethylenetriamine polycondensates represented by polyamine-based cationic resins, epichlorohydrin-dimethylamine addition polymers, dimethyldiallylammonium chloride-80.sub.2 copolymers, diallylamine salt-80.sub.2 copolymers, (meth)acrylate-containing polymers having a quaternary ammonium salt group-substituted alkyl group in the.

DETD An inorganic mordant may be used as the mordant described above, and examples thereof include polyvalent water-soluble metal salts, hydrophobic metal salt compounds, and the like.

DETD Specific examples of the inorganic mordants include salts and complexes of a metal selected from magnesium, aluminum, calcium, scandium, titanium, vanadium, manganese, iron, nickel, copper, zinc, gallium, germanium, strontium, yttrium, zirconium, molybdenum, indium.

DETD Among the inorganic mordants, aluminum-containing compounds, titanium-containing compounds, zirconium-containing compounds, and metal compounds (salts or complexes) of the metals in group IIIB of the periodic table are preferable.

DETD . . . yellowing resistance of the white portion of the resulting recording media The surface pH may be determined according to the method for measurement of surface pH that is commonly-known by the Japanese Technical Association of the Pulp and Paper Industry (J. TAPPI) as the "Method A (coating method)" , by using, for example, a pH-measuring set for determining the pH of paper surface "MODEL MPC" (trade name, manufactured by KYORITSU CHEMICAL-CHECK Lab., Corp.), which complies with the A method.

DETD . . . that the surface pH of the ink-receiving layer becomes 3 to 8. The acid above may be used as a metal salt (e.g., a salt of sodium, potassium, calcium, cesium, zinc, copper, iron, aluminum, zirconium, lanthanum-4 yttrium, magnesium, strontium, cerium, or.

DETD . . . compounds, acylaminophenol compounds, ester compounds, amide compounds, ascorbic acid, amine-based antioxidants, 2-(2-hydroxyphenyl)benzotriazole compounds, 2-hydroxy benzophenone compounds, acrylates, water-soluble or hydrophobic metal salts, organic metal compounds, metal complexes, hindered amine compounds (including TEMPO compounds), 2-(2-hydroxyphenyl)1,3,5-triazine compounds, metal deactivators, phosphite compounds, phosphonite compounds, hydroxyamine compounds, nitron compounds, peroxide scavengers, polyamide stabilizer, polyether compounds, basic auxiliary stabilizers, nucleating agents.

DETD . . . then, alkylated phenol compounds, compound having two or more thioether bonds, bisphenol compounds, ascorbic acid, amine-based antioxidants, water-soluble or hydrophobic metal salts, organic metal compounds, metal complexes, hindered amine compounds, polyoxyamine compounds, polyamine compounds, thiourea compounds, hydrazide compounds, hydroxybenzoic acid compounds, dihydroxybenzoic acid compounds, trihydroxybenzoic acid.

DETD . . . support made of a transparent material such as plastic and an opaque support made of an opaque material such as paper may be used as the support for the recording medium according to the invention. Use of a transparent support or.

DETD . . . 40% or more on the surface where the ink-receiving layer formed. The glossiness is a value determined by the known method , i.e., 75-degree mirror surface glossiness test procedure for

paper and cardboard. Specific examples of the supports include the following:

DETD High-glossiness paper supports such as art paper, coated paper, cast-coated paper, baryta paper commonly used as silver salt photographic support and the like; high-glossiness films opacified by adding a white pigment or the like to any one of plastic films including polyesters such as polyethylene terephthalate (PET), nitrocellulose, cellulose acetate, cellulose esters such as cellulose acetate butyrate, polysulfone, polyphenylene oxide, polyimide, polycarbonate, polyamide and the like (which may be additionally surface calendered); supports having a polyolefin coated layer containing or not containing a white pigment formed on the surface of the various paper supports, the transparent supports or the high-glossiness films containing a white pigment or the like; and the like. Expanded polyester.

DETD Hereinafter, base paper for the resin-coated paper will be described in detail.

DETD . . . by sheeting a primary raw material of wood pulp and additionally a synthetic pulp such as polypropylene, or a synthetic fiber such as nylon or polyester as needed. The wood pulp may be any one of LBKP, LBSF, NBKP, NESF, LDP.

DETD . . . including higher fatty acid, sizing agent such as alkylketene dimer, white pigment such as calcium carbonate, talc and titanium oxide, paper-strength additive such as starch, polyacrylamide, and polyvinyl alcohol, fluorescent whitening agent, moisturizing agent such as polyethylene glycols, dispersant, softener such as quaternary ammonium, and the like may be added to the base paper as needed.

DETD . . . for use in sheeting is preferably 200 to 500 ml as Canadian Standard Freeness (CSF), and in regard to the fiber length after beating, the pulps remaining on 24- and 42-mesh screens is preferably 30 to 70% by weight, as determined by the known method of screening test of paper pulp. Further, the pulp remaining on 4-mesh screen is preferably 20% by weight or less.

DETD The basis weight of the base paper is preferably 30 to 250 g and more preferably 50 to 200 g. The thickness of the base paper is preferably 40 to 250 μm. The base paper may be calendered for improvement in surface smoothness during or after the sheeting step. The density of the base paper is generally 0.7 to 1.2 g/cm³ as determined by the known test procedure for determination the thickness and density of paper.

DETD In addition, the stiffness of the base paper is preferably 20 to 200 g as determined by the known test procedure for determining the stiffness of paper by using a Clark stiffness tester.

DETD A surface-sizing agent may be applied onto the surface of the base paper and sizing agents similar to those that may be added to the base paper can be used as the surface sizing agent. The pH of the base paper is preferably 5 to 9, as determined by the known hot-water extraction method specified in the test for determining the tensile properties of paper.

DETD The polyethylene covering the front and rear surfaces of the base paper is mainly a low-density polyethylene (LDPE) and/or a high-density polyethylene (HDPE), but other LDPE, polypropylene, or the like may also.

DETD The polyethylene-coated paper may be used as a glazed paper, and the polyethylene layer coated on the surface of base paper by melt-extrusion may be further subjected to a surface modification treatment such as embossing so that it has a mat.

DETD The ink-receiving layer in the recording medium according to the

invention is favorably prepared, for example, by a method (Wet-on-Wet method) of applying the first coating solution at least containing a polymer microparticle and a water-soluble resin (hereinafter, referred to as. . . simultaneously with the application or (2) before the film coated by application shows a falling drying rate while drying; and crosslinking and hardening the coated layer that is applied with the second coating solution (Wet-on-Wet method). The polymer microparticle according to the invention is favorably contained in at least one of the coating solution (A) and coating solution (B). In addition, the cross-linking agent capable of crosslinking the water-soluble resin is also preferably contained in at least one of the coating solution (A) and coating solution (B).

DETD . . . present in a greater amount in the ink-receiving layer closer to the surface when the layer is prepared by the method above, advantageously leading to more brilliant coloration of the ink-jet ink (ink composition) and increase in the water resistance of.

DETD . . . coater, reverse roll coater, bar coater, and the like, may be used for applying the coating solution (B) in the method (1). However, a coating method whereby the coater does not brought into direct contact with the first coated layer, such as that using an extrusion.

DETD . . . applied onto the support as it is. The two layers of coating solutions laminated before application tend to make a crosslinking reaction at the interface of the two solutions before they are applied onto the support, often causing increase in viscosity.

DETD Recording Method

DETD The recording method according to the invention records images on the recording medium described above by using an ink composition containing a microparticle. . . the recording medium. The methods for recording images on the recording medium by using the ink composition include ink-jet recording method, printing method, photolithographic method, transfer method, and the like, and among them, ink-jet recording and photolithographic methods are preferable.

DETD In the recording method according to the invention, after the image formation above, the microparticles in the ink are then fused as the microparticles.

DETD Hereinafter, the recording method according to the invention will be described, taking the ink-jet recording method of effectively ejecting ink through a nozzle onto a recording medium, which is particularly preferable in the invention, as an.

DETD The ink-jet recording method is not particularly limited, and may be any one of known methods including the charge-control method of ejecting ink by using electrostatic attraction, the drop-on-demand method (pressure pulse method) of ejecting ink by using the vibrational pressure of a piezoelectric element, the acoustic ink jet process of converting an electrical signal into a sound beam, and ejecting ink by the radiational pressure caused by irradiation of the beam thereon, and the thermal ink-jet method (bubble-jet (registered trade name)) of ejecting ink by using the pressure caused by air bubble generated and grown at high.

DETD In particular, the ink-jet recording method described in JP-A No. 54-59936, which ejects ink through a nozzle by the force due to the rapid change in volume of ink by application of thermal energy, is preferable as the ink-jet recording method.

DETD In addition, the ink jet head used in the ink-jet recording method may be that of on-demand method or of

continuous method. Specific examples of the ejection methods include electromechanical conversion methods (e.g., single cavity type, double cavity type, vendor type, piston, . . . trade name) type, and the like), electrostatic attraction methods (e.g., electric field-controlled type, slit jet type, and the like), discharge method (e.g., spark jet type and the like), and the like, and any method is usable.

DETD The ink nozzle and others that are used in the recording by the ink-jet recording method are not particularly limited, and may be selected properly according to applications.

DETD The heating treatment is preferably carried out at a temperature of the glass transition temperature (T_g) of polymer microparticles or more, and more preferably about 10° C. higher than the T_g. The heating means . . .

DETD . . . ratio with respect to the pulp) of epoxidized behenic amide, 1.0 parts of anionic polyacrylamide, 0.1 parts of polyamide polyamine epichlorohydrin, and 0.5 parts of cationic polyacrylamide, and the resulting mixture was sheeted into a base paper having a basis weight of 170 g/m in a Fourdrinier machine.

DETD For adjustment of the surface size of the base paper, a fluorescent whitening agent (trade name: WHITEX 88, manufactured by Sumitomo Chemical Co., Ltd.) was added to an aqueous 4% polyvinyl alcohol solution at a concentration of 0.04%; the solution was impregnated into the base paper in such a manner that the polyvinyl alcohol is impregnated to a content of 0.5 g/m.sup.2 as absolute dry mass; . . .

DETD . . . layer is formed, was subjected to a corona discharge treatment, and a high-gloss thermoplastic resin layer was formed on the paper front side surface by extruding a low-density polyethylene containing 10% anatase titanium dioxide, a trace amount of ultramarine, and a . . .

DETD As is apparent from the results in Table 1, images on the ink-jet recording sheet recorded by the recording method in Examples 1 to 3 showed less ink bleeding and were superior in water resistance, abrasion resistance, light fastness, and . . .

CLM What is claimed is:

1. A recording method comprising recording an image on a recording medium having formed thereon an ink-receiving layer containing a polymer microparticle and subjecting;
2. The method according to claim 1, wherein the microparticle dispersion contains a hydrophobic polymer and the ink-receiving layer has a porous structure.
3. The method according to claim 1, wherein the oil-soluble compound is an oil-soluble dye.
4. The method according to claim 2, wherein the oil-soluble compound is an oil-soluble dye.
5. The method according to claim 1, wherein an oxidation potential of the oil-soluble compound is larger than 1.0 V (vs. SCE).
6. The method according to claim 2, wherein an oxidation potential of the oil-soluble compound is larger than 1.0 V (vs. SCE).
7. The method according to claim 3, wherein an oxidation potential of the oil-soluble compound is larger than 1.0 V (vs. SCE).
8. The method according to claim 1, wherein the oil-soluble compound is an azo dye having at least one heterocyclic ring or a . . .

9. The method according to claim 2, wherein the oil-soluble compound is an azo dye having at least one heterocyclic ring or a . . .
10. The method according to claim 3, wherein the oil-soluble compound is an azo dye having at least one heterocyclic ring or a . . .
11. The method according to claim 1, wherein the polymer microparticle is at least one selected from the group consisting of polymers and . . .
12. The method according to claim 2, wherein the polymer microparticle is at least one selected from the group consisting of polymers and . . .
13. The method according to claim 3, wherein the polymer microparticle is at least one selected from the group consisting of polymers and . . .
14. The method according to claim 1, wherein a pore volume per unit thickness (A/B) of the ink receiving layer, obtained by dividing . . . than the diameter of the polymer microparticle as determined from a micropore distribution curve obtained by a nitrogen gas adsorption method, by a dry film thickness B (μm) of the ink-receiving layer, is 2.0 (+10.sup.-5 ml/cm.sup.2/μm) or more.
15. The method according to claim 2, wherein a pore volume per unit thickness (A/B) of the ink receiving layer, obtained by dividing . . . than the diameter of the polymer microparticle as determined from a micropore distribution curve obtained by a nitrogen gas adsorption method, by a dry film thickness B (μm) of the ink-receiving layer, is 2.0 (+10.sup.-5 ml/cm.sup.2/μm) or more.
16. The method according to claim 3, wherein a pore volume per unit thickness (A/B) of the ink receiving layer, obtained by dividing . . . than the diameter of the polymer microparticle as determined from a micropore distribution curve obtained by a nitrogen gas adsorption method, by a dry film thickness B (μm) of the ink-receiving layer, is 2.0 (+10.sup.-5 ml/cm.sup.2/μm) or more.
17. The method according to claim 1, wherein a film layer is formed by the heating treatment.
18. The method according to claim 2, wherein a film layer is formed by the heating treatment.
19. The method according to claim 1, wherein an ink-jet recording method is used.
20. The method according to claim 2, wherein an ink-jet recording method is used.

L23 ANSWER 8 OF 70 USPATFULL on STN

ACCESSION NUMBER: 2005:189982 USPATFULL Full-text
 TITLE: Hand dishwashing compositions comprising polymeric suds volume and suds duration enhancers and methods for washing with same
 INVENTOR(S): Kasturi, Chandrika, Cincinnati, OH, UNITED STATES
 Schaffer, Michael Gayle, Alexandria, KY, UNITED STATES
 Sivik, Mark Robert, Ft. Mitchell, KY, UNITED STATES
 Kluesener, Bernard William, Harrison, OH, UNITED STATES
 Scheper, William Michael, Lawrenceburg, IN, UNITED STATES
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Bodet, Jean-Francois, Mason, OH, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005164898	A1	20050728
APPLICATION INFO:	US 2005-85774	A1	20050321 (11)
RELATED APPLN. INFO:	Division of Ser. No. US 2001-979563, filed on 14 Nov 2001, GRANTED, Pat. No. US 6903064 A 371 of International Ser. No. WO 2000-US14564, filed on 25 May 2000		

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-135982P	19990526 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	THE PROCTER & GAMBLE COMPANY, INTELLECTUAL PROPERTY DIVISION, WINTON HILL TECHNICAL CENTER - BOX 161, 6110 CENTER HILL AVENUE, CINCINNATI, OH, 45224, US	
NUMBER OF CLAIMS:	10	
EXEMPLARY CLAIM:	1	
LINE COUNT:	6970	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

SUMM . . . do not necessarily produce a substantial amount of corresponding suds. Furthermore, suds offer a visually appealing experience during the wash process and effectively cover the dirty wash water.

DETD Polyalkyleneimine copolymers comprise random segments of polyalkyleneimine, preferably polyethyleneimine, together with segments of amino acid residues. For example, tetraethylenepentamine is reacted together with polyglutamic acid and polyalanine to form . . .

DETD . . . is a --(R.sub.50).sub.KR.sub.5-- unit, said units may be suitably formed by the addition an alkyleneoxy producing reactant (e.g. ethylene oxide, epichlorohydrin) or by addition of a suitable polyethyleneglycol. More preferably S is C.sub.2-C.sub.4 linear alkylene. When the index j is 0 . . .

DETD Another preferred zwitterionic polymer according to the present invention are polymers which have limited crosslinking, said polymers having the formula: ##STR35## wherein R, R.sub.1, L.sub.1, S, j', x, y, and z are the same as . . .

DETD . . . boosters, buffers, antifungal or mildew control agents, insect repellents, anti-corrosive aids, bleach, aqueous liquid carrier, bleach catalysts, bleach activators, solvent, fabric softeners, hydrotrope, pH adjusting material dye transfer inhibitors, optical bleach, brightener, suds suppressors, electrolytes, and chelants.

DETD . . . component, more preferably a C12-C18 alkyl or hydroxyalkyl, and M is H or a cation, e.g., an alkali (Group IA) metal cation (e.g., sodium, potassium, lithium), substituted or unsubstituted ammonium cations such as methyl-, dimethyl-, and trimethyl ammonium and quaternary ammonium . . .

DETD . . . preferably between about 0.5 and about 3, and M is H or a cation which can be, for example, a metal cation (e.g., sodium, potassium, lithium, etc.), ammonium or substituted-ammonium cation. Alkyl ethoxylated sulfates as well as alkyl propoxylated sulfates are . . .

DETD . . . is a C1-C6 hydrocarbyl, preferably an alkyl, or combination thereof, and M is a soluble salt-forming cation. Suitable salts include metal salts such as sodium, potassium, and lithium salts, and substituted or unsubstituted ammonium salts, such as methyl-, dimethyl-, trimethyl, and . . .

DETD . . . C8-C22 primary or secondary alkanesulphonates, C8-C24 olefinsulphonates, sulphonated polycarboxylic acids prepared by sulphonation of the pyrolyzed product of alkaline earth metal citrates, e.g., as described in British patent specification No. 1,082,179, alkyl glycerol sulfonates, fatty acyl glycerol sulfonates, fatty oleyl glycerol . . .

DETD . . . are substantially non irritant to human skin and have a primary biodegradability higher than 90% as measured by the Wickbold method Bias-7d. Two examples of the Levenol compounds are Levenol V-501/2 which has 17 ethoxylated groups and is derived from tallow . . .

DETD . . . but can be derived synthetically, e.g., by the oxidation of petroleum or by hydrogenation of carbon monoxide by the Fischer-Tropsch process. The monoethanolamides and diethanolamides of C12-14 fatty acids are preferred.

DETD . . . amylase, such as B. amyloliquefaciens, B. subtilis, or B. stearothermophilus; (b) stability-enhanced amylases as described by Genencor International in a paper entitled "Oxidatively Resistant alpha-Amylase" presented at the 207th American Chemical Society National Meeting, Mar. 13-17 1994, by C. Mitchinson. Therein . . .

DETD . . . sulfite, bisulfite, thiosulfite, thiosulfate, iodide, etc., antioxidants like carbonate, ascorbate, etc., organic amines such as ethylenediaminetetracetic acid (EDTA) or alkali metal salt thereof and monoethanolamine (MEA), and mixtures thereof. Other conventional scavenging anions like sulfate, bisulfate, carbonate, bicarbonate, percarbonate, nitrate, chloride . . .

DETD . . . as well as amorphous-solid silicates or other types, for example especially adapted for use in non-structured-liquid detergents. Preferred are alkali metal silicates, particularly those liquids and solids having a SiO.sub.2:Na.sub.2O ratio in the range 1.6:1 to 3.2:1, including solid hydrous 2-ratio . . .

DETD . . . are those having empirical formula: [M.sub.z(AlO.sub.2).sub.z(SiO.sub.2).sub.v].xH.sub.2O wherein z and v are integers of at least 6, M is an alkali metal, preferably Na and/or K, the molar ratio of z to v is in the range from 1.0 to 0.5, and . . . is an integer from 15 to 264. Aluminosilicates can be crystalline or amorphous, naturally-occurring or synthetically derived. An aluminosilicate production method is in U.S. Pat. No. 3,985,669, Krummel, et al, Oct. 12, 1976. Preferred synthetic crystalline aluminosilicate ion exchange materials are . . .

DETD P-containing detergent builders often preferred where permitted by legislation include, but are not limited to, the alkali metal, ammonium and alkanolammonium salts of polyphosphates exemplified by the tripolyphosphates, pyrophosphates, glassy polymeric meta-phosphates; and phosphonates.

DETD Suitable carbonate builders include alkaline earth and alkali metal carbonates as disclosed in German Patent Application No. 2,321,001 published on Nov. 15, 1973, although sodium bicarbonate, sodium carbonate, sodium . . .

DETD . . . maleic anhydride with ethylene or vinyl methyl ether; 1, 3, 5-trihydroxy benzene-2, 4, 6-trisulphonic acid; carboxymethyloxysuccinic acid; the various alkali metal, ammonium and substituted ammonium salts of polyacetic acids such as ethylenediamine tetraacetic acid and nitrilotriacetic acid; as well as mellicic.

DETD Where permitted, and especially in the formulation of bars, alkali metal phosphates such as sodium tripolyphosphates, sodium pyrophosphate and sodium orthophosphate can be used. Phosphonate builders such as ethane-1-hydroxy-1,1-diphosphonate and other . . .

DETD Particularly preferred perfume materials are those that provide the

largest odor improvements in finished product compositions containing cellulases. These perfumes include but are not limited to: hexyl cinnamic aldehyde; 2-methyl-3-(para-tert-butylphenyl)-propionaldehyde; 7-acetyl-1,2,3,4,5,6,7,8-octahydro-1,1,6,7-tetramethyl-
DETD . . . preferably comprises from about 0.5% to 8%, by weight of the liquid detergent composition of a hydrotrope selected from alkali metal and calcium xylene and toluene sulfonates.
DETD . . . from about 1% to about 30%, more typically from about 5% to about 20%, of the detergent composition, especially for fabric laundering. If present, the amount of bleach activators will typically be from about 0.1% to about 60%, more typically from . . .
DETD . . . are preferably combined with bleach activators, which lead to the in situ production in aqueous solution (i.e., during the washing process) of the peroxy acid corresponding to the bleach activator. Various nonlimiting examples of activators are disclosed in U.S. Pat. No. . . .
DETD . . . in a single product. Conveniently, the single product leads to in situ production in aqueous solution (i.e., during the washing process) of the percarboxylic acid corresponding to the bleach activator. The product itself can be hydrous, for example a powder, provided.
DETD The present invention compositions may optionally utilize metal-containing bleach catalysts that are effective for use in cleaning compositions. Preferred are manganese and cobalt-containing bleach catalysts.
DETD . . . PCT/IB98/00302 (Attorney Docket No. 6524L#); Preferred examples of these catalysts include MnIV2(u-O)3(1,4,7-trimethyl-1,4,7-triazacyclononane)2(PF6)2, MnIII2(u-O)1(u-OAc)2(1,4,7-trimethyl-1,4,7-triazacyclononane)2(ClO4)2, MnIV4(u-O)1(1,4,7-trimethyl-1,4,7-triazacyclononane)2(ClO4)3, MnIII-MnIV4(u-O)1(1,4,7-trimethyl-1,4,7-triazacyclononane)-(OCH3)3(PF6)2, and mixtures thereof. Other metal-based bleach catalysts include those disclosed in U.S. Pat. Nos. 4,430,243, 5,114,611, 5,622,646 and 5,686,014. The use of manganese with various . . .
DETD Compositions herein may also suitably include as a bleach catalyst the class of transition metal complexes of a "macropolymeric rigid ligand". The phrase "macropolymeric rigid ligand" is sometimes abbreviated as "MRL". One useful MRL is . . .
DETD . . . catalyst species in the wash liquor. In order to obtain such levels in the wash liquor of an automatic dishwashing process, typical automatic dishwashing compositions herein will comprise from about 0.0005% to about 0.2%, more preferably from about 0.004% to about . . .
DETD Chelating Agents--The detergent compositions herein may also optionally contain a chelating agent which serves to chelate metal ions, e.g., iron and/or manganese, within the non-aqueous detergent compositions herein. Such chelating agents thus serve to form complexes with metal impurities in the composition which would otherwise tend to deactivate composition components such as the peroxygen bleaching agent. Useful chelating . . .
DETD . . . carboxylates useful as optional chelating agents include ethylenediaminetetraacetates, N-hydroxyethyl-ethylenediaminetetraacetates, nitrilotriacetates, ethylene-diamine tetrapropionates, triethylenetetraaminehexacetates, diethylenetriaminepentacetates, ethylenediaminedisuccinates and ethanol glycolcines. The alkali metal salts of these materials are preferred as chelating agents . . .
DETD thereof. The chelating agent may, of course, also act as a detergent builder during use of the compositions herein for

tetrafunctional siloxane monomer units, and hence, a sufficient level of crosslinking, such that they dry down to a rigid, or hard, film are considered to be silicone resins. The ratio of oxygen atoms to silicon atoms is indicative of the level of crosslinking in a particular silicone material. Silicone materials which have at least about 1.1 oxygen atoms per silicon atom will generally . . .
DETD . . . T' and/or Q' to D, D', M and/or M' in a silicone resin is indicative of higher levels of crosslinking. As discussed before, however, the overall level of crosslinking can also be indicated by the oxygen to silicon ratio.
DETD . . . those that can impart a gel-like viscosity to the composition, such as water soluble or colloidal water soluble polymers like cellulose ethers (e.g., methylcellulose, hydroxybutyl methylcellulose, hydroxypropylmethylcellulose, hydroxyethyl ethylcellulose and hydroxyethylcellulose), guar gum, polyvinyl alcohol, polyvinyl pyrrolidone, hydroxypropyl guar . . .
DETD . . . preferably less than 3 and more preferably less than 2 meq/g. The charge density can be measured using the Kjeldahl method and should be within the above limits at the desired pH of use, which will in general be from about . . .
DETD Other cationic polymers that can be used include polysaccharide polymers, such as cationic cellulose derivatives and cationic starch derivatives. Cationic polysaccharide polymer materials suitable for use herein include those of the formula: ##STR6## wherein: A is an anhydroglucose residual group, such as starch or cellulose anhydroglucose residual, R is an alkylene oxyalkylene, polyoxyalkylene, or hydroxyalkylene group, or combination thereof, R.sup.1, R.sup.2 and R.sup.3 independently are . . .
DETD Cationic cellulose is available from Amerchol Corp. (Edison, N.J., USA) in their Polymer JN (trademark) and LR (trade mark) series of polymers, as salts of hydroxyethyl cellulose reacted with trimethyl ammonium substituted epoxide, referred to in the industry (CTFA) as Polyquaternium 10. Another type of cationic cellulose includes the polymeric quaternary ammonium salts of hydroxyethyl cellulose reacted with lauryl dimethyl ammonium-substituted epoxide, referred to in the industry (CTFA) as Polyquaternium 24. These materials are available from . . .
DETD . . . as guar hydroxypropyltrimonium chloride (commercially available from Celanese Corp. in their Jaguar trade mark series). Other materials include quaternary nitrogen-containing cellulose ethers (e.g., as described in U.S. Pat. No. 3,962,418, incorporated by reference herein), and copolymers of etherified cellulose and starch (e.g., as described in U.S. Pat. No. 3,958,581, incorporated by reference herein).
DETD Preferably the deposition polymer is selected from the group comprising cationic hydroxyalkyl cellulose ethers and cationic guar derivatives. Particularly preferred deposition polymers are Jaguar C138, Jaguar C15, Jaguar C17 and Jaguar C162. Other preferred cationic cellulose ethers include Polymer JR400, JR30M and JR125.
DETD The organic styling polymers also preferably have a glass transition temperature (Tg) or crystalline melting point (Tm) of at least about -20° C., preferably from about 20° C. to about . . . that are not unduly sticky or tacky to the touch. As used herein, the abbreviation "Tg" refers to the glass transition temperature of the backbone of the polymer, and the abbreviation "Tm" refers to the crystalline melting point of the backbone, if such a transition exists for a given polymer. Preferably, both the Tg and the Tm, if any, are within the ranges recited hereinabove.
DETD . . . phase polymer. Suitable dispersed phase polymers include water

fabric laundering/bleaching. The chelating agent, if employed, can comprise from about 0.1% to 4% by weight of the compositions herein. More . . .
DETD . . . most preferably from about 4,000 to 5,000. Water-soluble salts of such acrylic acid polymers can include, for example, the alkali metal, salts. Soluble polymers of this type are known materials. Use of polyacrylates of this type in detergent compositions has been . . .
DETD . . . the art can also be utilized in the compositions herein. Another type of preferred anti-redespersion agent includes the carboxy methyl cellulose (CMC) materials. These materials are well known in the art.
DETD . . . of the present invention may also include one or more materials effective for inhibiting the transfer of dyes from one fabric to another during the cleaning process. Generally, such dye transfer inhibiting agents include polyvinyl pyrrolidone polymers, polyamine N-oxide polymers, copolymers of N-vinylpyrrolidone and N-vinylimidazole, manganese phthalocyanine, . . .
DETD . . . called the "exhaustion coefficient". The exhaustion coefficient is in general as the ratio of a) the brightener material deposited on fabric to b) the initial brightener concentration in the wash liquor. Brighteners with relatively high exhaustion coefficients are the most suitable . . .
DETD . . . appreciated that other, conventional optical brightener types of compounds can optionally be used in the present compositions to provide conventional fabric "brightness" benefits, rather than a true dye transfer inhibiting effect. Such usage is conventional and well-known to detergent formulations.
DETD . . . or other ion, water hardness encountered during laundering/bleaching use of the compositions herein. Examples of such materials include the alkali metal, citrates, succinates, malonates, fatty acids, carboxymethyl succinates, carboxylates, polycarboxylates and polyacetyl carboxylates. Specific examples include sodium, potassium and lithium salts . . .
DETD Examples of suitable alkalinity sources include water-soluble alkali metal carbonates, bicarbonates, borates, silicates and metasilicates. Although not preferred for ecological reasons, water-soluble phosphate salts may also be utilized as alkalinity sources. These include alkali metal pyrophosphates, orthophosphates, polyphosphates and phosphonates. Of all of these alkalinity sources, alkali metal carbonates such as sodium carbonate are the most preferred.
DETD . . . compositions by light scattering methods well known in the art for determining average particle size for emulsified liquids. One such method involves the use of a Horiba LA-910 particle size analyzer.
DETD . . . The viscosity can be measured by means of a glass capillary viscometer as set forth in Dow Corning Corporate Test Method CTM0004, Jul. 20, 1970, which is incorporated by reference herein in its entirety. Suitable silicone fluids include polyalkyl siloxanes, polyaryl . . .
DETD Also useful are silicone resins, which are highly crosslinked polymeric siloxane systems. The crosslinking is introduced through the incorporation of trifunctional and tetrafunctional silanes with monofunctional or difunctional, or both, silanes during manufacture of the silicone resin. As is well understood in the art, the degree of crosslinking that is required in order to result in a silicone resin will vary according to the specific silane units incorporated. . . silicone materials which have a sufficient level of trifunctional and

soluble nonionic polymers and water soluble anionic polymers. Suitable nonionic polymers include cellulose ethers (e.g., hydroxybutyl methylcellulose, hydroxypropylcellulose, hydroxypropyl methylcellulose, ethylhydroxy ethylcellulose and hydroxyethylcellulose), propylene glycol alginates, polyacrylamide, poly(ethylene oxide), polyvinyl alcohol, polyvinylpyrrolidone, . . . guar gum, locust bean gum, amylose, hydroxyethyl amylose, starch and starch derivatives and mixtures thereof. Preferred nonionic polymers include hydroxyethyl cellulose, polyethylene oxide, polyvinyl pyrrolidone, polyvinyl alcohol, polyacrylamide, hydroxypropyl cellulose, ethylhydroxyethyl cellulose, dextran, polypropyleneoxide and hydroxypropyl guar or mixtures thereof.
DETD Suitable anionic water-soluble polymers include carboxymethyl cellulose, carrageenan, xanthum gum polystyrene sulfonate, gum agar, gum ghatti, gum karaya, pectins, alginate salts, as well as poly(acrylic acid) and acrylic or methacrylic acid derivatives such as the alkali metal and ammonium salts of acrylic acid, methacrylic acid. Mixtures of the above anionic water-soluble polymers may also be used.
DETD Preferred anionic polymers include polyacrylic acid; sodium carboxy methyl cellulose; polyacrylates; polymethyl acrylate; polysulphates such as polyvinyl sulfate, polystyrene sulfonate, polyphosphates, sodium dextran sulfate, alginate salts and pectate
DETD Most preferred for use in the present invention are ethyl hydroxyethyl cellulose, hydroxyethyl cellulose, hydroxypropyl guar and polystyrene sulfonate.
DETD Additionally, the antidandruff agent can be a heavy metal magnesium or aluminum salts of 1-hydroxy-2-pyridinethione which has the following structural formula in tautomeric form, the sulfur being attached to . . .
DETD The metal salts represent substitution of the metal cation for the hydrogen of one of the tautomeric forms. Depending, of course, on the valence of the metal involved there may be more than one of the pyridinethione rings in the compound. Suitable heavy metals include zinc, tin, . . .
DETD . . . M is a cation such as ammonium, alkanolamines, such as triethanolamine, monovalent metals, such as sodium and potassium, and polyvalent metal cations, such as magnesium, and calcium. The cation M, of the anionic co-surfactant should be chosen such that the anionic . . .
DETD . . . to about 18, carbon atoms; and M is a cation, as previously described, subject to the same limitations regarding polyvalent metal cations as previously discussed. Examples of such co-surfactants are the salts of an organic sulfuric acid reaction product of a . . . and a sulfonating agent, e.g., SO₃ sub.3, H.sub.2SO₄ sub.4, obtained according to known sulfonation methods, including bleaching and hydrolysis. Preferred are alkali metal and ammonium sulfonated C-sub.10-18 n-paraffins.
DETD . . . of reactants, the nature of the starting olefins and impurities in the olefin stock and side reactions during the sulfonation process.
DETD . . . n and m are numbers from 1 to 4, R is C-sub.8-C-sub.22 alkyl or alkenyl, and M is hydrogen, alkali metal, alkaline earth metal, ammonium or alkanolammonium.
DETD . . . is CO-sub.2M or CH-sub.2CO-sub.2M, n is 2 or 3, preferably 2, M is hydrogen or a cation, such as alkali metal (e.g., lithium, sodium, potassium), alkaline earth metal (beryllium, magnesium, calcium, strontium, barium), or ammonium. This type of co-surfactant is sometimes classified as an imidazoline-type amphoteric co-surfactant, although. . .

DETD 1M is hydrogen or a cation, as previously described, such as an alkali metal, alkaline earth metal, or ammonium.

DETD . . . preferably from about 7% to about 20%, by weight of the bar. These detergent builders can be, for example, water-soluble alkali-metal salts of phosphates, pyrophosphates, orthophosphates, tripolyphosphates, higher polyphosphates, and mixtures thereof. A preferred builder is a water-soluble alkali-metal salt of tripolyphosphate, and a mixture of tripolyphosphate and pyrophosphate. The builder can also be a non-phosphate detergent builder. Specific examples of a non-phosphorous, inorganic detergent builder include water-soluble inorganic carbonate and bicarbonate salts. The alkali metal (e.g., sodium and potassium) carbonates, bicarbonates, and silicates are particularly useful herein. Specific preferred examples of builders include sodium tripolyphosphates.

DETD . . . and maleic acid are preferred as auxiliary builders, since it has been observed that their use in combination with the fabric softening clay and the clay flocculating agent further stabilizes and improves the clay deposition and fabric softening performance.

DETD . . . above, a hydrotrope, or mixture of hydrotropes, can be present in the laundry detergent bar. Preferred hydrotropes include the alkali metal, preferably sodium, salts of toluene sulfonate, xylene sulfonate, cumene sulfonate, sulfosuccinate, and mixtures thereof. Preferably, the hydrotrope, in either the . . .

DETD Fabric Softening Clay--The fabric softening clay is preferably a smectite-type clay. The smectite-type clays can be described as expandable, three-layer clays; i.e., aluminosilicates and. . . a size that they can not be perceived tactilely, so as not to have a gritty feel on the treated fabric of the clothes. The fabric softening clay can be added to the bar to provide about 1% to about 30% by weight of the bar.

DETD . . . of laundry bars comprising softening clay alone. The polymeric clay flocculating agent is selected to provide improved deposition of the fabric softening clay. Typically such materials have a high molecular weight, greater than about 100,000. Examples of such materials can include. . .

DETD . . . a detergent chelant. Such chelants are able to sequester and chelate alkali cations (such as sodium, lithium and potassium), alkali metal earth cations (such as magnesium and calcium), and most preferably, heavy metal cations such as iron, manganese, zinc and aluminum. Preferred cations include sodium, magnesium, zinc, and mixtures thereof. The detergent chelant. . .

DETD Preferably such salts or complexes have a molar ratio of metal ion to chelant molecule of at least 1:1, preferably at least 2:1.

DETD . . . an alkyl chain predominantly containing from 16 to 18 carbon atoms, so-called "high-cut fatty alcohol," which can exhibit less base odor of fatty alcohol relative to broad cut fatty alcohols. Typically fatty alcohol is contained in the laundry bar at up to. . .

DETD Another preferred optional component in the laundry bar is a secondary fabric softener component in addition to the softening clay. Such materials can be used at levels of about 0.1% to 5%.

DETD Soil suspending agents can be used. In the present invention, their use is balanced with the fabric softening clay/clay flocculating agent combination to provide optimum cleaning and fabric softening performance. Soil suspending agents can also include water-soluble salts of carboxymethylcellulose and carboxyhydroxymethylcellulose. A preferred soil suspending agent is. . .

DETD In a typical process, the raw materials are mixed in the blender. Alkylbenzene sulfonic acid (when used) is added into a mixture of alkaline. . .

Water q.s. to 100.00%

*The Zinc pyridinethione salt crystals prepared according to the method described in U.S. Pat. No. 4,379,753 to Bolich.

L23 ANSWER 9 OF 70 USPATFULL on STN
 ACCESSION NUMBER: 2005:178052 USPATFULL Full-text
 TITLE: Polymer mixtures with improved odor control
 INVENTOR(S): Engelhardt, Friedrich, Frankfurt, GERMANY, FEDERAL REPUBLIC OF
 Funk, Rudiger, Niedernhausen, GERMANY, FEDERAL REPUBLIC OF
 Wanior, Mariola, Erlensee, GERMANY, FEDERAL REPUBLIC OF

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PATENT INFORMATION: US 2005154133 A1 20050714
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 LEGAL REPRESENTATIVE: MARSHALL, GERSTEIN & BORUN LLP, 233 S. WACKER DRIVE, SUITE 6300, SEARS TOWER, CHICAGO, IL, 60606, US

NUMBER OF CLAIMS: 13
 EXEMPLARY CLAIM: 1-11
 LINE COUNT: 1657

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

TI Polymer mixtures with improved odor control

SUMM . . . gel, cosmetic thickeners, sunscreen; thickeners for oil/water or water/oil emulsions; textiles (gloves, sportswear, moisture regulation in textiles, shoe inserts); chemical process industry applications (catalyst for organic reactions, immobilization of large functional molecules (enzymes), adhesive for agglomerations, heat storage media, filtration aids, . . . hygiene articles, superabsorbents are generally positioned in an absorbent core which, as well as SAP, comprises other materials, including fibers (cellulose fibers), which act as a kind of liquid buffer to immediately store the spontaneously applied liquid insults and are intended. . .

SUMM The current trend in the hygiene sector, e.g. in diaper design, is toward ever thinner constructions having a reduced cellulose fiber content and an increased hydrogel content. The trend toward ever thinner diaper constructions has substantially changed the performance profile required. . .

SUMM . . . but whose monomer solution is applied two-dimensionally prior to the polymerization, or else, starting from hydrogel-forming polymer particles, an intra-molecular crosslinking is carried out to form macrostructures. For instance, JP 04004247 describes the preparation of a water-absorbing film from maleic anhydride. . .

SUMM . . . example pressure due to the bodyweight of the wearer of the hygiene article, and clog the pores in the SAP/cellulosic fiber absorbent and so prevent continued uptake of fluid. Enhanced gel strength is generally obtained through a higher degree of crosslinking, although this reduces retention performance. As might be expected from the inherent nature of hydrogel-forming addition polymers, it has not. . .

DETD . . . ethoxylated polyethylene imine

PAEC methyl quaternized ethoxylated dihexylene triamine

MA/AA Copolymer of 1:4 maleic/acrylic acid, average molecular weight about 70,000.

CMC Sodium carboxymethyl cellulose

Protease Proteolytic enzyme of activity 4 KNPU/g sold by NOVO Industries A/S under the tradename Savinase

Cellulase Cellulytic enzyme of activity 1000. . .

DETD . . . compositions are stable, anhydrous heavy-duty liquid laundry detergents which provide excellent stain and soil removal performance when used in normal fabric laundering operations.

DETD . . . is an anhydrous heavy duty liquid laundry detergent which provides excellent stain and soil removal performance when used in normal fabric laundering operations.

DETD Compositions FF-MM described hereinabove can be used neat or diluted. In a method according to the present invention, these compositions are diluted in 65 times their weight of water and applied to a. . .

DETD . . . Preservative q.s. to 0.4 0.4
 Water and Minors 100% 100%

.sup.1Polyquaternium 24, a polymeric quaternary ammonium salt of hydroxyethyl cellulose reacted with lauryl dimethyl ammonium-substituted epoxide, available from Amerchol Corp. (Edison, NJ, USA).

.sup.2A 40/60 weight ratio blend of polydimethylsiloxane. . .

DETD . . . Dow Corning (2-1520; 13556-34).

.sup.2Carbopol 981 is a crosslinked polyacrylate available from B. F. Goodrich.

.sup.3Polyquaternium-10 is JR30M, a cationic cellulose derived polymer available from Amerchol.

.sup.4EP Silicone is an experimental emulsion polymerized polydimethyl siloxane of about 335,000 csk with particle. . . available from Dow Corning (2-1520; PE106004).

.sup.5Jaguar C17 is a cationic polymer available from Rhone-Poulenc

.sup.6Polyquaternium-10 is JR400, a cationic cellulose derived polymer available from Amerchol.

DETD . . . Citric Acid 0.1 0.2
 Color solution 0.1
 Perfume 0.5
 Water q.s. to 100.00%

*The Zinc pyridinethione salt crystals prepared according to the method described in U.S. Pat. No. 4,379,753 to Bolich.

DETD . . . alkyl sulfate 10%

BAS	9
Zinc Pyridinethione*	2.0
Coconut Monoethanolamide	2.0
SUDS1	0.33
Triethanolamine	3.0
Magnesium/Aluminium Silicate	0.5
Hydroxy Methyl Cellulose	0.6
Color solution	0.1
Perfume	0.3
Water	q.s. to 100.00%

*The Zinc pyridinethione salt crystals prepared according to the method described in U.S. Pat. No. 4,379,753 to Bolich.

DETD . . . Lauric Diethanolamide 2.0
 Color solution 0.12
 Perfume 0.5

SUMM One way of enhancing gel strength while preserving high absorptive capacities is surface postcrosslinking. In this process, dried superabsorbents having an average crosslink density are subjected to an additional crosslinking step. The process is known to one skilled in the art and described in EP-A-0 349 240. Surface postcrosslinking increases the crosslink density. . .

SUMM . . . present, for example, amines, acids, aldehydes, ketones, phenols, polycyclics, indoles, aromatics, polyaromatics, etc., that are responsible for unpleasant body odors. Odor development takes place in two stages, first in the course of exudation from the body region and then when the fluid has already been present in the absorption medium for a defined time. Both odor factors have to be eliminated, since it is undesirable for cost reasons to change the hygiene article after every absorption process. . .

SUMM . . . was found in the course of the sniff test that a higher pH will generally encourage bacterial growth. In the process, the urea in the urine is increasingly split by urease into carbon dioxide and ammonia, which leads to a further. . .

SUMM When acidic hydrogels are used in hygiene articles, odor control is good. However, there are disadvantages with existing manufacturing processes, since the polymerization of the monomer solution is very. . .

SUMM Hitherto the following possibilities have been available for attempting to achieve odor control in the hygiene sector:

Odor control coupled with simultaneous absorption by addition of inert inorganic substances having a large surface area, generally as a solid. . . such as AEROSIL® or CAB-O-SIL® are used here.

Addition of substances capable of complexing with organic molecules or with metal ions present in the body fluid to prevent the development of unpleasant odors. This preferably takes the form of the. . . composition. Cyclodextrins are added in small particle size (usually less than 12 µm) to offer a large surface area for odor elimination. Further complexing agents are aminopolycarboxylic acids and their salts, ethylenediaminetetraacetate EDTA, ethylenediaminepentamethylenephosphonic acid, ethylenediaminetetramethylenephosphonic acid, aminophosphates, polyfunctional aromatics, N,N'-disuccinimides. . . inhibitors to control the formation or activity of enzymes responsible for the cleavage of urea into ammonia and hence for odor development.

Addition of antimicrobial substances. Enzymes control bacterial growth and thereby minimize odor development due to bacterial degradation processes (e.g., oxidoreductase+mediator). Examples of antimicrobial substances include quaternary ammonium compounds, phenols, amides, acids and. . .

SUMM . . . 2,5-diethoxy-2,5-dihydrofuran, succinaldehyde, glutaraldehyde, glyoxal, glyoxylic acid, hexahydrotriazine, tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione (Dazomet), 2,4-dichlorobenzyl alcohol, benzalkonium chloride, chlorhexidine gluconate, triclosan.

Use of transition metal compounds (Cu, Ag, Zn). Use of microcapsules which release the active substance on contact with moisture.

SUMM As well as the classes of compounds mentioned, useful odor control compounds further include the following: peroxides, bicarbonate, triclosan, plant extracts, etheral oils, boron compounds, poly-alpha-amino acids (polylysine), imides, polyimides, . . .

SUMM In general, however, the addition of odor inhibitors will have an adverse effect on the absorption profile of superabsorbent hydrogels. Therefore, the polymer mixtures of the present invention are

preferably used without these odor-inhibiting materials.

SUMM It is an object of the present invention to develop a product combining high absorptive performance and/or swell rate with odor-binding properties.

SUMM . . . mol % or less. Particular preference is given to unhydrolyzed copolymers. Preference is given to polymer mixtures prepared by a process in which the hydrogel-forming polymers and the copolymer of C.sub.2-C.sub.8 olefins or styrenes with anhydrides are prepared in two steps.

SUMM . . . hygiene sector, the anhydride component ring-opens to take up the basic components (ammonia for example) which are substantially responsible for odor development and which are formed by enzymatic processes or bacterial degradation reactions. For the purposes of the present invention, the . . .

SUMM After spinning, the fibers are heated to 140-210° C. to cure them by removing water and crosslinking through ester and amide linkages. The fibers thus crosslinked are water swellable and hence absorbent.

SUMM The addition of partially neutralized copolymers of C.sub.2-C.sub.8 olefins or styrenes with anhydrides in fiber form can provide higher acquisition rates and higher retention values than is the case with the granular polymer mixture of the present invention. A partial hydrolysis consumes anhydride groups and therefore generally either more copolymer is used and/or known odor inhibitors are added. The degree of partial hydrolysis is preferably not more than 15 mol %.

SUMM . . . to the use of the polymer mixtures of the present invention as an absorbent for aqueous fluids that provides reduced odor formation. Reduced odor formation means that the addition of the copolymers at 10% by weight improves the buffering capacity by at least 0.2.

SUMM . . . particular polymers of (co)polymerized hydrophilic monomers, graft (co)polymers of one or more hydrophilic monomers on a suitable grafting base, crosslinked cellulose or starch ethers, crosslinked carboxymethylcellulose, partially crosslinked polyalkylene oxide or natural products that swell in aqueous fluids, for example guar.

SUMM Suitable grafting bases can be of natural or synthetic origin. Examples are starch, cellulose or cellulose derivatives, such as carboxymethylcellulose, and also other polysaccharides and oligosaccharides, polyvinyl alcohol, polyalkylene oxides, especially polyethylene oxides and polypropylene oxides.

SUMM Preferred hydrogel-forming polymers are crosslinked polymers having acid groups which are predominantly in the form of their salts, generally alkali metal or ammonium salts. Such polymers swell particularly strongly on contact with aqueous fluids to form gels.

SUMM Preference is given to polymers which are obtained by crosslinking polymerization or copolymerization of acid-functional monoethylenically unsaturated monomers or derivatives thereof, eg salts, esters, anhydrides. It is further possible to . . .

SUMM . . . given to crosslinked polymers of monoethylenically unsaturated monomers which bear acid groups and which are optionally converted into their alkali metal or ammonium salts before or after polymerization and of 0-40% by weight, based on their total weight, of monoethylenically unsaturated.

SUMM Preference is given to crosslinked polymers of monoethylenically unsaturated C.sub.3- to C.sub.12-carboxylic acids and/or their alkali metal or ammonium salts. Preference is given in particular to crosslinked polycyclic acids where 5-30 mol %, preferably 5-20 mol %, . . . particularly preferably 5-10 mol % of their acid groups, based on the monomers containing acid groups, are present as alkali metal

cations may be used not only alone but also mixed with each other. Of the metal cations mentioned, all metal salts are suitable that possess adequate solubility in the solvent to be used. Of particular suitability are metal salts with weakly complexing anions such as for example chloride, nitrate and sulfate. Useful solvents for the metal salts include water, alcohols, DMF, DMSO and also mixtures thereof. Particular preference is given to water and water-alcohol mixtures such.

SUMM The spraying of the metal salt solution onto the particles of the hydrogel-forming polymer may be effected not only before but also after the surface postcrosslinking of the particles. In a particularly preferred process, the spraying of the metal salt solution takes place in the same step as the spraying of the crosslinker solution, the two solutions being sprayed separately in succession or simultaneously via two nozzles or the crosslinker and metal salt solutions may be sprayed conjointly through a single nozzle.

SUMM . . . surface area of 50-450 m.sup.2/g. The admixture of finely divided inorganic solids preferably takes place after the surface modification through crosslinking/complexing, but may also be carried out before or during these surface modifications. The surface-postcrosslinking material is generally heat treated.

SUMM are known and commercially obtainable. Their preparation has been exhaustively described, for example in US 5066742 and US 5026784, whose method of making is hereby incorporated into the present invention by reference.

SUMM The odor-binding copolymers of C.sub.2-C.sub.8 olefins or styrenes with anhydrides have a particle size distribution which is generally in the range from . . .

SUMM The C.sub.2-C.sub.8 olefin-anhydride, especially maleic anhydride, copolymer fibers capable of absorbing aqueous fluids are preferably obtained by the method of U.S. Pat. No. 5,026,784 example 1 column 8 line 24 and have the properties described there (degree of neutralization 55%, diameter of noncrosslinked fiber: 2-3 denier).

SUMM The polymer mixtures comprise improved odor control properties as well as high ultimate absorption capacity, high gel strength and permeability and also high retention. Owing to . . . copolymers of C.sub.2-C.sub.8 olefins or styrenes with anhydrides, the products of the present invention have antimicrobial properties, thereby providing an odor control system which obviates the addition of further odor-inhibiting substances or odor-masking materials.

SUMM The addition of partially neutralized copolymers of C.sub.2-C.sub.8 olefins or styrenes with anhydrides in fiber form provides higher acquisition rates and also higher retention values than is the case with the granular polymer mixture of . . .

SUMM In contrast to the prior art, where an added odor control unit to the superabsorbent polymer leads to a decrease in the absorptive performance, the polymer mixture of the present . . . the invention permit substantially less costly manufacture, since there is no need for binders or other aids for binding an odor control unit to hydrogel-forming polymers.

SUMM . . . (B) and comprising 10-100% by weight of the polymer mixture according to the invention

0-90% by weight of hydrophilic fiber material preferably 20-100% by weight of the polymer mixture according to the invention, 0-80% by weight of the hydrophilic fiber material

more preferably 30-100% by weight of the polymer mixture according to the invention, 0-70% by weight of the hydrophilic fiber material

even more preferably 40-100% by weight of the polymer mixture according to the

or ammonium salts.

SUMM . . . glycol diglycidyl ether and polypropylene glycol diglycidyl ether, polyaziridine compounds such as 2,2-bishydroxymethylbutanol tris(3-(1-aziridinyl)propionate), 1,6-hexamethylenediethylenurea, diphenylmethanebis-4,4'-N,N'-diethylenurea, halooxy compounds such as epichlorohydrin and α -methyl ϵ -pifluorohydrin, polyisocyanates such as 2,4-tolylene diisocyanate and hexamethylene diisocyanate, alkylene carbonates such as 1,3-dioxolan-2-one and 4-methyl-1,3-dioxolan-2-one, also bisoxazolines and oxazolidones, polyamidoamines and also their reaction products with epichlorohydrin, also polyquaternary amines such as condensation products of dimethylamine with epichlorohydrin, homo- and copolymers of diallyldimethylammonium chloride and also homo- and copolymers of dimethylaminoethyl(meth)acrylate which are optionally quaternized with, for example, . . .

SUMM Useful crosslinkers further include multivalent metal ions capable of forming ionic crosslinks. Examples of such crosslinkers are magnesium, calcium, barium and aluminum ions. These crosslinkers are . . .

SUMM . . . one of the above-specified per compounds and the reducing component is for example ascorbic acid, glucose, sorbose, ammonium or alkali metal bisulfite, sulfite, thiosulfate, hyposulfite, pyrosulfite or sulfide, or a metal salt, such as iron(II) ions or sodium hydroxymethylsulfoxylate. The reducing component in the redox catalyst is preferably ascorbic acid or . . .

SUMM . . . the range from 20 to 30 mol %, based on the monomers containing acid groups. Useful neutralizing agents include alkali metal bases or ammonia/amines. Preference is given to the use of aqueous sodium hydroxide solution, aqueous potassium hydroxide solution or lithium . . .

SUMM To effect surface postcrosslinking, compounds capable of reacting with the functional groups of the polymers by crosslinking are applied to the surface of the hydrogel particles, preferably in the form of an aqueous solution. The aqueous solution. . .

SUMM The subsequent crosslinking reacts polymers which have been prepared by the polymerization of the abovementioned monoethylenically unsaturated acids and optionally monoethylenically unsaturated comonomers.

SUMM . . . aziridine compounds based on polyethers or substituted hydrocarbons, for example bis-N-aziridinomethane, polyamines or polyamidoamines and their reaction products with epichlorohydrin, polyols such as ethylene glycol, 1,2-propanediol, 1,4-butanediol, glycerol, methyltriglycol, polyethylene glycols having an average molecular weight M.sub.w of 200-10. . .

SUMM Particularly suitable postcrosslinkers are di- or polyglycidyl compounds such as ethylene glycol diglycidyl ether, the reaction products of polyamidoamines with epichlorohydrin and 2-oxazolidinone.

SUMM . . . on the outer shell of the hydrogel particles is effected by spraying with solutions of divalent or more highly valent metal salt solutions, and the metal cations can react with the acid groups of the polymer to form complexes. Examples of divalent or more highly valent metal cations are Mg.sup.2+, Ca.sup.2+, Al.sup.3+, Sc.sup.3+, Ti.sup.4+, Mn.sup.2+, Fe.sup.2+/3+, Co.sup.2+, Ni.sup.2+, Cu.sup.+/2+, Zn.sup.2+, Y.sup.3+, Zr.sup.4+, Ag.sup.+, La.sup.3+, Ce.sup.4+, Hf.sup.4+, and Au.sup.+/3+. Preferred metal cations are Mg.sup.2+, Ca.sup.2+, Al.sup.3+, Ti.sup.4+, Zr.sup.4+ and La.sup.3+, and particularly preferred metal cations are Al.sup.3+, Ti.sup.4+ and Zr.sup.4+. The metal

invention, 0-60% by weight of the hydrophilic fiber material

much more preferably 50-100% by weight of the polymer mixture according to the invention, 0-50% by weight of the hydrophilic fiber material

particularly preferably 60-100% by weight of the polymer mixture according to the invention, 0-40% by weight of the hydrophilic fiber material

especially preferably 70-100% by weight of the polymer mixture according to the invention, 0-30% by weight of the hydrophilic fiber material

extremely preferably 80-100% by weight of the polymer mixture according to the invention, 0-20% by weight of the hydrophilic fiber material

most preferably 90-100% by weight of the polymer mixture according to the invention, 0-10% by weight of the hydrophilic fiber material

(D) optionally a tissue layer positioned directly above and below said core (C) and

(E) optionally. . .

SUMM The hydrophilic fiber material can be wholly or partly replaced by fiber material composed of copolymers of C.sub.2-C.sub.8 olefins or styrenes with anhydrides. The preferred percentages are to be understood so that . . . polymer mixture according to the invention and all in between λ ages (for example 12.2%) are possible and correspondingly hydrophilic fiber material from 0 to respectively 89, 88, 87, 86, 85, 83, 82, 81% by weight and in between percentages (for example 87.8%) are possible. If further materials are present in the core, the percentages of polymer and fiber decrease accordingly. The same applies to the preferred ranges, for example in the case of extremely preferably 81, 82, 83, . . . mixture according to the invention and correspondingly 19, 18, 17, 16, 15, 14, 13, 12, 11% by weight of the fiber material. So the preferred range contains 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 to 100% by weight. . .

SUMM The core (C) includes not only the polymer mixture of the invention but also hydrophilic fiber material. By hydrophilic is meant that aqueous fluids spread quickly over the fiber. The fiber material is usually a cellulose, modified cellulose, rayon, polyester such as polyethylene terephthalate. Particular preference is given to cellulose fibers such as pulp. The fibers generally have a diameter of 1-200 μ m, and preferably 10-100 μ m, and also have . . .

SUMM are known and described in detail in the literature. A construction for installing the polymer mixture can be for example a fiber matrix consisting of a cellulose fiber mixture (air-laid web, wet laid web) or synthetic polymer fibers (meltblown web, spunbonded web) or else of a fiber blend of cellulose fibers and synthetic fibers. Possible fiber materials are detailed in the chapter which follows. The air-laid web process is described for example in WO 98/28 478. Furthermore, open-celled foams or the like may be used to install the . . .

SUMM The second layer may either be water pervious or water impervious. The layer material used may be tissues or other fabric, closed or open-celled foams, perforated films, elastomers or fabrics composed of fiber material. When the absorbent composition consists of a construction of layers, the layer material should have a pore structure whose . . .

SUMM Fiber Materials of the Absorbent Composition

SUMM The structure of the present absorbent composition according to the invention may be based on various fiber materials, which are used as a fiber network or matrices. The present invention includes not only fibers of natural origin (modified or unmodified) but

also synthetic fibers.

SUMM Examples of cellulose fibers include cellulose fibers which are customarily used in absorption products, such as fluff pulp and cellulose of the cotton type. The materials (soft- or hardwoods), production processes such as chemical pulp, semichemical pulp, chemothermo-mechanical pulp (CTMP) and bleaching processes are not particularly restricted. For instance, natural cellulose fibers such as cotton, flax, silk, wool, jute, ethylcellulose and cellulose acetate are used.

SUMM thermoplastic fibers. In the course of the heat treatment, the latter migrate to some extent into the matrix of the fiber material present and so constitute bond sites and renewed stiffening elements on cooling. Additionally the addition of thermoplastic fibers means. . . C., preferably in the range from 75° C. to 175° C. These temperatures are too low for damage to the cellulose fibers to be likely.

SUMM Lengths and diameters of the above-described synthetic fibers are not particularly restricted, and generally any fiber from 1 to 200 mm in length and from 0.1 to 100 denier (gram per 9 000 meters) in diameter. . . in length, particularly preferred thermoplastic fibers are from 6 to 12 mm in length. The preferred diameter for the thermoplastic fiber is in the range from 1.4 to 10 decitex, and the range from 1.7 to 3.3 decitex (gram per 10 000 meters) is particularly preferred. The form of the fiber may vary; examples include woven types, narrow cylindrical types, cut/chopped yarn types, staple fiber types and continuous filament fiber types.

SUMM . . . to the definition of Robert F. Gould in the 1964 American Chemical Society publication "Contact angle, wettability and adhesion", a fiber is referred to as hydrophilic when the contact angle between the liquid and the fiber (or the fiber surface) is less than 90° or when the liquid tends to spread spontaneously on the same surface. The two processes are generally coexistent. Conversely, a fiber is termed hydrophobic when a contact angle of greater than 90° is formed and no spreading is observed.

SUMM Preference is given to using hydrophilic fiber material. Particular preference is given to using fiber material which is weakly hydrophilic on the body side and most hydrophilic in the region surrounding the polymer mixture. In the manufacturing process, layers having different hydrophilicities are used to create a gradient which channels impinging fluid to the hydrogel, where it is. . .

SUMM Suitable hydrophilic fibers for use in the absorbent composition of the invention include for example cellulose fibers, modified cellulose fibers, rayon, polyester fibers, for example polyethylene terephthalate (DACRON®), and hydrophilic nylon (HYDROFIL®). Suitable hydrophilic fibers may also be obtained. . .

SUMM . . . create an absorbent layer in the form of a matrix, or by incorporating the polymer particle mixture in layers of fiber mixture, where they are ultimately fixed, whether by means of adhesive or by lamination of the layers.

SUMM The fluid-acquiring and -distributing fiber matrix may comprise synthetic fiber or cellulosic fiber or a mixture of synthetic fiber and cellulosic fiber, in which case the mixing ratio may vary from (100 to 0) synthetic fiber: (0 to 100) cellulosic fiber. The cellulosic fibers used may additionally have been chemically stiffened to increase the dimensional stability of the hygiene article.

SUMM The chemical stiffening of cellulosic fibers may be provided in

Schleicher & Schull) is subsequently placed. . . The Plexiglass cylinder containing the polymer mixture is then placed with plastic plate and weight on top of the filter paper and left there for 60 minutes. At the end of this period, the complete unit is removed from the filter paper and the Petri dish and subsequently the weight is removed from the Plexiglass cylinder. The Plexiglass cylinder containing swollen hydrogel. . .

SUMM The test method for determining SFC is described in U.S. Pat. No. 5 599 335.

DETD comparative examples by a combination of absorption quantity and swell rate and exhibit a high fluid permeability and also improved odor control properties. They are therefore very useful as absorbents for water and aqueous fluids, especially body fluids, for example urine. . .

DETD 50 parts of powder of the 1-butylene/maleic anhydride copolymer fibers prepared as per the method of U.S. Pat. No. 5,026,784 Example 1 column 8 line 24 and 50 parts from comparative example 1 are mixed. . .

DETD The absorptive performance data of the examples are discernible from table 1, while the odor control properties are approximated in table 2 using the pH as measured after 6 hours (buffering capacity).

TABLE 1

DETD AUL. . . The results show that the inventive examples provide distinctly improved odor control coupled with substantially the same absorptive performance. The distinctly improved odor control was demonstrated in the test by the enormous buffering capacity on titration with 0.1 molar NaOH solution. Comparative example 3 and comparative example 5 admittedly likewise give good odor control at a lower pH than inventive examples 1 and 2, but the performance with regard to CRC in particular. . .

DETD . . . which has been optimized especially with regard to Absorbency Under Load at pH 5.95 and pH 6.1 respectively, whereas the odor control properties (buffering capacity) are moderate. However, mixing this material with copolymer fibers (in a ratio of 1:1 in comparative. . .

CLM What is claimed is:
20. The polymer mixture of claim 19 wherein component (i) is grafted onto carboxymethyl-cellulose.

23. A method of an absorbing aqueous fluid and reducing odor formation comprising contacting the fluid with a polymer-mixture of claim 1.

L23 ANSWER 10 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2005:163347 USPATFULL Full-text
TITLE: Fixing belt, fixing roller, production method thereof, fixing apparatus and image fixing method utilizing the apparatus
INVENTOR(S): Kaga, Makoto, Tokyo, JAPAN
Kida, Shuji, Tokyo, JAPAN
Suzuki, Shinichi, Tokyo, JAPAN
Ohya, Hidenobu, Tokyo, JAPAN
Fukuda, Teruyuki, Tokyo, JAPAN
Miyamoto, Fujio, Tokyo, JAPAN
PATENT ASSIGNEE(S): Konica Corporation (non-U.S. corporation)

different ways. A first way of providing fiber stiffening is by adding suitable coatings to the fiber material. Such additives include for example polyamide-epichlorohydrin coatings (Kymene® 557 H, Hercules, Inc. Wilmington, Del.), polyacrylamide coatings (described in U.S. Pat. No. 3,556,932 or as the Parex® 631 NC commercial product from American Cyanamid Co., Stamford, Conn.), melamine-formaldehyde coatings and polyethyleneimine coatings.

SUMM Cellulosic fibers may also be chemically stiffened by chemical reaction. For instance, suitable crosslinker substances may be added to effect crosslinking taking place within the fiber. Suitable crosslinker substances are typical substances used for crosslinking monomers including but not limited to C.sub.2-C.sub.8-dialdehydes, C.sub.2-C.sub.8-monoaldehydes having acid functionality and in particular C.sub.2-C.sub.9-polycarboxylic acids. Specific substances from this. . . glutaraldehyde, glyoxal, glyoxylic acid, formaldehyde and citric acid. These substances react with at least 2 hydroxyl groups within any one cellulose chain or between two adjacent cellulose chains within any one cellulose fiber. The crosslinking causes a stiffening of the fibers, to which greater dimensional stability is imparted as a result of this treatment. In. . .

SUMM Chemically crosslinked cellulose fibers are known and described in WO 91/11162, U.S. Pat. No. 3,224,926, U.S. Pat. No. 3,440,135, U.S. Pat. No. 3,932,209, . . . 4,035,147, U.S. Pat. No. 4,822,453, U.S. Pat. No. 4,888,093, U.S. Pat. No. 4,898,642 and U.S. Pat. No. 5,137,537. The chemical crosslinking imparts stiffening to the fiber material, which is ultimately reflected in improved dimensional stability for the hygiene article as a whole. The individual layers are. . .

SUMM Examples of processes to obtain an absorbent composition comprising for example polymer mixture (c) embedded in a fiber material blend of synthetic fibers (a) and cellulosic fibers (b), the blend ratio varying from (100 to 0) synthetic fiber: (0 to 100) cellulosic fiber, include (1) a process where (a), (b) and (c) are mixed together at one and the same time, (2) a process where a mixture of (a) and (b) is mixed into (c), (3) a process where a mixture of (b) and (c) is mixed with (a), (4) a process where a mixture of (a) and (c) is mixed into (b), (5) a process where (b) and (c) are mixed and (a) is continuously metered in, (6) a process where (a) and (c) are mixed and (b) is continuously metered in, and (7) a process where (b) and (c) are mixed separately into (a). Of these examples, processes (1) and (5) are preferred. The apparatus used in this process is not particularly restricted and any customary apparatus known to one skilled in the art can be used.

SUMM . . . heat treatment, so that an absorption layer having excellent dimensional stability in the moist state is obtained. The heat treatment process is not particularly restricted. Examples include heat treatment by feeding hot air or infrared irradiation. The temperature of the heat. . .

SUMM The duration of the heat treatment depends on the type of synthetic fiber, its amount and the hygiene article production rate.

SUMM Generally the duration of the heat treatment is in the range from. . . This method measures the free availability of the polymer mixture in a teabag. 0.2000±0.0050 g of the polymer mixture of the invention. . .

SUMM . . . to be level with the filter plate surface without the surface of the filter plate being wetted. A round filter paper 90 mm in diameter and <20 µm in pore size (S&S 589 Schwarzband from

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005140767	A1	20050630
APPLICATION INFO.:	US 2005-62517	A1	20050222 (11)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-206310, filed on 26 Jul 2002, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2001-237685	20010806
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	MUSERLIAN, LUCAS AND MERCANTI, LLP, 475 PARK AVENUE SOUTH, 15TH FLOOR, NEW YORK, NY, 10016, US	
NUMBER OF CLAIMS:	23	
EXEMPLARY CLAIM:	1-20	
NUMBER OF DRAWINGS:	1 Drawing Page(s)	
LINE COUNT:	2030	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

TI Fixing belt, fixing roller, production method thereof, fixing apparatus and image fixing method utilizing the apparatus
AB . . . than 30 g/5 cm or a pencil hardness of HB or more, and the surface layer is produced by a method comprising the steps of: coating a hardenable silicone on the base material by a dip coating; and hardening the coated. . .

SUMM The present invention relates to a fixing belt and a fixing roller, a production method of the same as well as a thermal fixing apparatus and an image fixing method utilizing the same.

SUMM . . . which utilize electrophotographic processes, it is necessary that toner images, which have been transferred to transferring materials such as copy paper sheets, are fixed. Widely employed as said toner image fixing method is one in which a paper sheet is allowed to pass between a rotating heating roller and a pressure roller in contact with each other so that the toner image on said copy paper sheet is thermally fused.

SUMM However, said method has caused the following problems. Due to the relatively short contact length of said copy paper sheet with said fixing roller depending on its radius of curvature, said copy paper sheet is separated from said fixing roller after a relatively short contact time with said fixing roller. Specifically, full color. . .

SUMM . . . gloss after fixing, and result in neither layer peeling of the fixing member during thermal fixing nor offsetting, a production method of the same, a thermal fixing apparatus, and an image forming method.

SUMM . . . layer has a peel strength of not less than 30 g/5 cm, and the surface layer is produced by a method comprising the steps of: coating a hardenable silicone on the base material by a dip coating; and hardening. . .

SUMM . . . wherein the surface layer has a pencil hardness of HB or more, and the surface layer is produced by a method comprising the steps of: coating a hardenable silicone on the base material by a dip coating; and hardening. . .

SUMM . . . layer has a peel strength of not less than 30 g/5 cm, and the surface layer is produced by a method comprising the steps of: coating a hardenable silicone on the base material by a dip coating or a bead. . .

SUMM . . . wherein the surface layer has a pencil hardness of HB or more, and the surface layer is produced by a method comprising the

steps of:
coating a hardenable silicone on the base material by a dip coating or a bead.

SUMM A producing method of a fixing belt for fixing an ink jet image recorded on an ink jet recording material, the method comprising the steps of:

coating a hardenable silicone onto a base material by a dip coating; and

SUMM A producing method of a fixing belt for fixing an ink jet image recorded on an ink jet recording material, the method comprising the steps of:

coating a hardenable silicone onto a base material by a dip coating; and

SUMM A producing method of fixing roller comprising a heating roller and a pressure roller for fixing an ink jet image recorded on a. . . the pressure roller, the heating roller having a base material A, the pressure roller having a base material B, the method comprising the steps of:

coating a hardenable silicone onto at least one of the base material A and. .

SUMM A producing method of fixing roller comprising a heating roller and a pressure roller for fixing an ink jet image recorded on a. . . the pressure roller, the heating roller having a base material A, the pressure roller having a base material B, the method comprising the steps of:

coating a hardenable silicone onto at least one of the base material A and. .

SUMM An image fixing method for fixing an ink jet image recorded on an ink jet recording material with utilizing a heating means, a pressure means and the fixing belt described in Item.1 or Item.2, the method comprising:

letting the ink jet recording material and the fixing belt in a facing state through between the

DETD Herein, the peel strength of said surface layer is determined employing the method described below.

DETD <Method for Determining Surface Peel Strength of Surface Layer>>

DETD <Method for Determining Pencil Hardness of Surface Layer>>

DETD . . . all of which are also manufactured by Shin-Etsu Silicone Co. Of these, preferably employed are double release silicones for release paper such as KS-881, KS-882, KS-883, X-62-9490, and X-62-9029.

DETD . . . employing, for example, an Automatic Contact Angle Meter AC-VZ (manufactured by Kyowa Kaimein Kagaku Co.) while utilizing a liquid drop method (approximately 15 μ l of pure water is carefully dripped onto the surface to be measured and 0.5 second after contact, . .

DETD . . . and 424, all manufactured by Kuraray Kogyo Co., Ltd.), butyral resins (for example, 3000K, manufactured by Denki Kagaku Kogyo Co.), metal alkoxides such as titanium alkoxide and zirconium alkoxide, ethylene-vinyl acetate copolymers, olefin based resins such as vinylidene chloride or butadiene based resins, urethane based resins, polyester based resins, acrylic based resins, epoxy based resins, and polyethyleneimine based resins. Further, these resins may be thermally hardened employing hardening agents such as isocyanate based compounds, amine based compound, . .

DETD Said base paper may be provided with high smoothness through a calendaring treatment during a paper making stage or after paper making. Density of said base paper is commonly from 0.7 to 1.2 g/cm.sup.3 (based on JIS P 8118). Stiffness of said base paper is preferably from 20 to 200 g under conditions specified in JIS P 8143.

DETD The surface of said base paper may be coated with surface sizing agents. Employed as said surface sizing agents may be sizing agents such as higher fatty acids and alkylketene dimers which may be incorporated in said base paper.

DETD The pH of said base paper is preferably from 5 to 9, when determined employing the hot water extraction method specified in JIS P 8113.

DETD Polyethylene employed for coating both sides of said base paper is comprised mainly of low density polyethylene (LDPE) and/or high density polyethylene (HDPE). In addition, LDPE and polypropylene may be . .

DETD As widely employed in photographic paper, rutile or anatase type titanium oxide is preferably incorporated in polyethylene which is employed to prepare the polyethylene layer on. .

DETD Polyethylene coated paper may be employed as glossy paper. Further, when polyethylene is applied onto the surface of said base paper through melt-extrusion, a matte surface or a silk surface, which is commonly available in photographic paper, may be prepared employing a so-called embossing process. In the present invention, such embossed polyethylene coated paper may also be employed.

DETD The used amount of polyethylene on both sides of said base paper is determined so as to minimize curl at low humidity as well as at high humidity, after providing a porous. . .

DETD Further, it is preferable that said polyethylene coated paper supports have the characteristics described below.

DETD . . . 200 g, and the same in the lateral direction is preferably from 20 to 200 g when determined employing the method specified in JIS P 8116.

DETD . . . opacity is preferably at least 80 percent and is more preferably from 85 to 98 percent, when determined employing the method specified in JIS P 8183.

DETD 9. Clark stiffness: supports having a Clark stiffness of recording paper sheets in the transport direction of 50 to 300 cm.sup.2/100 is preferred.

DETD 10. Moisture content in core paper: moisture content of core paper is commonly from 2 to 100 percent by weight with respect to the core paper, and is preferably from 2 to 6 percent by weight.

DETD . . . inorganic particles. Heretofore, various methods have been known which form pores in a layer. For example, such methods include a method in which a uniform coating composition, comprising at least two types of polymers, is applied onto a support and during the drying process, these polymers are subjected to phase separation from one another so as to form pores, a method in which a coating composition, comprising fine solid particles and hydrophilic or hydrophobic binders, is applied onto a support, and . . in a composition containing water, or suitable organic solvents, so as to form pores by dissolving fine solid particles, a method in which after coating a coating composition, comprising compounds which generate gas during layer formation, pores are formed by allowing said compounds to generate gas during a drying process, a method in which a coating composition, comprising fine porous solid particles and hydrophilic binders, is applied onto a support, and

DETD It is possible to provide the primer layer according to the present invention, employing a coating method in which layer forming components are directly or after being dissolved in suitable solvents are coated and subsequently dried, or a melt coating method in which layer forming components are melted and coated.

DETD . . . ester based solvents, ethers, and chlorine based solvents. It is possible to carry out said coating employing a dip coating method, a gravure roller coating method, an extrusion coating method, a wire bar coating method or a roller coating method, all of which are known in the prior art.

DETD Herein, the measurement method of the surface roughness of said surface layer, as well as the surface roughness of said fixing belt and fixing. . .

DETD In the present invention, surface roughness Ra was determined based on the following method.

DETD A production method of the fixing belt as well as the fixing roller according to the present invention will now be described.

DETD In said production method of the fixing belt as well as the fixing roller according to the present invention, it is preferable that its surface layer is formed through a thermal hardening process after dip-coating hardenable silicone, such as addition hardenable silicone or condensation hardenable silicone, onto the side of the fixing belt. . .

DETD Employed as said supports may be those including paper supports such as plain paper, art paper, coated paper and cast-coated paper, plastic supports, paper supports coated with polyolefin on both sides, and composite supports prepared by laminating those above, which have been employed as. . .

DETD . . . said ink absorptive layer, said support is subjected to a corona discharge treatment or a subbing treatment. Further, the recording paper sheets of the present invention need not necessarily be white, but may be colored. Further, it is particularly preferred to employ paper supports prepared by laminating both sides of a base paper support with polyethylene so that recorded images approach conventional photographic quality and high quality images are obtained at low cost.

DETD Such paper supports, which are laminated with polyethylene, will now be described.

DETD Base paper employed for said paper support is produced employing wood pulp as a main raw material, and if desired, employing synthetic pulp such as polypropylene, or synthetic fiber such as nylon or polyester. As wood pulp, for example, any of LKRP, LKSP, NBNP, NBSF, LDP, NDP, LDKP, and

DETD . . . suitably incorporated in said base paper may be, for example, sizing agents such as higher fatty acids and alkylketene dimers, white pigments such as calcium carbonate, talc, titanium dioxide, paper strength enhancing agents such as starch, polyacrylamide, and polyvinyl alcohol, optical brightening agents, moisture retaining agents such as polyethylene glycols, . .

DETD . . . CSF specifications. Further, the sum of weight percent of 24-mesh residue and weight percent of 42-mesh calculated portion regarding the fiber length after heating, specified in JIS-P-8207, is preferably between 30 and 70 percent. Incidentally, the weight percent of 4-mesh residue. . .

DETD The basis weight of said base paper is preferably from 30 to 250 g/m.sup.2, and is more preferably from 50 to 200 g/m.sup.2. The thickness of said base paper is preferably from 40 to 250 μ m.

pores are formed in said fine porous solid particles or between said fine particles, and a method in which a coating composition, comprising fine solid particles or fine oil droplets having approximately the same or a larger. . .

DETD Preferably employed as said silica are silica synthesized employing a conventional wet method, colloidal silica, and silica synthesized employing a gas phase method. In the present invention, listed as the most preferably employed fine particle silica is colloidal silica or fine particle silica synthesized employing a gas phase method. Of these, fine particle silica, synthesized employing a gas phase method, is more preferred, since it enables obtaining a high void ratio and in addition, when cationic polymers for fixing dyes. . .

DETD . . . inorganic particles is preferably less than or equal to 100 nm. For example, in the case of said gas phase method produced fine particle silica, the average diameter (the particle diameter in the dispersed state prior to coating) of said primary. . .

DETD . . . preferably employed silica, having a primary particle diameter of 4 to 20 nm, which are synthesized employing a gas phase method, is commercially available as, for example, Aerosil of Nippon Aerosil Co. It is possible to relatively easily disperse said gas phase method produced fine particle silica up to primary particles through suction dispersion, employing, for example, Jet Stream Inductor Mixer, manufactured by. . .

DETD . . . gelatin, polyethylene oxide, polyvinylpyrrolidone, polyacrylic acid, polyacrylamide, polyurethane, dextran, dextrin, Malagreen (W, I, K), agar, Pullulan, water-soluble polyvinyl butyral, hydroxyethyl cellulose, and carboxymethyl cellulose. These water-soluble resins may be employed in combinations of at least two types.

DETD . . . which a polyurethane resin emulsion is employed together with water-soluble epoxy compounds and/or acetoacetylated polyvinyl alcohol and further together with epichlorohydrin polyamide resins. In such a case, it is preferable that said polyurethane resin emulsion is comprised of particles of a. . . aliphatic isocyanate compounds and the resultant polyurethane resin has a sulfonic group in the molecule. It is more preferable that epichlorohydrin polyamide resin, and water-soluble epoxy compounds and/or acetoacetylated polyvinyl alcohol are included.

DETD Further, listed as criteria to select thermoplastic resins and those in the form of fine particles is the glass transition point (Tg). When Tg is lower than the coating drying temperature, for example when the coating drying temperature during production. . .

DETD Further, from the viewpoint of avoiding unpleasant odor as well as safety, it is preferable that residual monomer components are minimized. Specifically, the ratio of said residual monomer. . .

DETD . . . ink dyes employed in the present invention may be chelate dyes and azo dyes employed in so-called silver dye bleach method light-sensitive materials (for example, Cibachrome manufactured by Ciba-Geigy). . .

DETD . . . group, a carboxyl group, and a hydroxyl group, micro-emulsions, natural or synthetic wax emulsions of fine organic particles having three-dimensional crosslinking in their interior, paraffin wax, polyethylene wax, carnauba wax, latexes, colloid compositions, and suspensions. . .

DETD . . . the pigment dispersion, according to the present invention, employing a centrifuge, as well as employing filters, is also a preferable method.

DETD . . . determined while taking into account the stability in said ink, the image density, the gloss, and the lightfastness. In the

method for forming ink jet pigment images of the present invention, it is further preferable that said particle diameter is determined. . . pigments in images are dispersed into the layer which is formed by melting fine thermoplastic particles. When a high speed process is aimed, it is desired that in a short time, fine thermoplastic particles are melted so as to form a layer, and further, pigments are sufficiently dispersed into the resultant layer. During this process, the surface area of pigment particles plays an important role, and therefore there is an optimal range of the average. . .

DETD . . . ether, and propylene glycol monophenyl ether); amines (for example, ethanolamine, diethanolamine, triethanolamine, N-methyldiethanolamine, N-ethyldiethanolamine, morpholine, N-ethylmorpholine, ethylenediamine, diethylenediamine, triethylenetetraamine, tetraethylenepentaamine, polyethylenesamine, pentamethyldiethylenetriamine, and tetramethylpropylenediamine); amides (for example formamide, N,N-dimethylformamide, and N,N-dimethylacetamide); heterocyclic rings (for example, 2-pyrrolidone, N-methyl-2-pyrrolidone, cyclohexylpyrrolidone, 2-oxazolidone, and 1,3-dimethyl-2-imidazolidinone); . . .

DETD . . . During the thermal fixing process, it is desired that energy be provided to images so that the effects of the present invention are fully exhibited. . .

DETD . . . Further, said roller is preferably comprised of materials having a high thermal conductivity. Of these, metal rollers are particularly preferred and of these, a nickel roller is preferably employed. The image forming method of the present invention will now be described. . .

DETD . . . The image forming method of the present invention is characterized in that during fixing of images, the thermal fixing apparatus, according to the present. . .

DETD . . . Further, in the image forming method of the present invention, it is preferable that after printing images onto a recording material, employing a pigment ink, said recording material is thermally fixed employing the thermal fixing apparatus of the present invention. In said image forming method, it is preferable that pigment images, in which pigments and thermoplastic resins are mixed or which are located near said pigments and thermoplastic resins, are subjected to thermal fixing process. In such a case, it is preferable that said thermoplastic resins partially or completely melt and further form a layer. . .

DETD . . . value is preferably at least 60. Said C value, as described herein, refers to the value determined by the reflection method employing a 2 mm optical comb of image definitions specified in JIS K 7105. Said C value is defined as. . .

DETD . . . One L of a release agent (trade name: KS-830E, manufactured by Shin-Etsu Kagaku Kogyo Co.) for release paper sheets was mixed with 10 ml of a catalyst (trade name: CAT-PL-50T, also manufactured by Shin-Etsu Kagaku Kogyo Co.), and. . .

DETD . . . 113 were prepared in the same manner as Fixing Belt 106, except that the types of release agents, for release paper sheets were varied, and catalysts, diluting solvents, hardening temperature, and hardening time were suitably varied, employing said release agents, so. . .

DETD . . . Suction-dispersed 125 kg of gas phase method produced silica (Q8-20, manufactured by Tokuyama Co., Ltd.), having an average diameter of primary particles of 0.012 µm, was into. . .

DETD . . . Said silica coating composition and said fine composite particle coating composition in the order viewed from the polyethylene coated

paper, described below, were simultaneously applied onto said polyethylene coated paper so as to obtain a wet coating thickness of 120 µm and 120 µm, respectively. The resultant coating was temporarily. . . was dried employing a 20 to 65° C. airflow, whereby Ink Jet Recording Material 1 was prepared. Said polyethylene coated paper was comprised of a 170 g/M.sup.2 base paper coated with polyethylene on both sides (8 weight percent of anatase type titanium dioxide was incorporated in the polyethylene on. . .

DETD . . . Employing A4 plain paper sheets, a solid black image was continuously printed onto five sheets. Images after the thermal fixing process as well as the surface of the fixing belt was visually observed and the presence or absence of offsetting was. . .

DETD . . .

TABLE 1

Sample No.	Surface Layer Release Agent for Paper (µm)	Peel Strength g/cm	Pencil Hardness	Contact Angle in Degree	Surface Roughness (µm)	Thickness
101	KS-835	21	B	130	0.05	19
102	KS-3650	24	B	125	0.05	. . .
DETD	. . . the same manners as the offsetting evaluation of Example 1, 5 solid black images were continuously printed onto A4 plain paper sheets. Thereafter, a 3+3 cm adhesive tape (Nitro Polyester Tape No. 31B, manufactured by Nitto Denko Co., Ltd.) was adhered. . .					
DETD	One L of a release agent (trade name: KS-830E, manufactured by Shin-Etsu Kagaku Kogyo Co.) for release paper sheets was mixed with 10 ml of a catalyst (trade name: CAT-PL-50T, also manufactured by Shin-Etsu Kagaku Kogyo Co.), and. . .					
DETD	. . . the same manner as Image Sample 501, except that Ink Jet Recording Material 1 was replaced with Konica Photo-Like QP Paper. . .					
DETD	. . . and fixed. The resultant print was designated as Image Sample 504. Incidentally, fixed image samples were prepared employing A4 plain paper sheets (having a basis weight of 65 g/m.sup.2).					
DETD	. . .					

TABLE 5

Sample No.	Recording System	Medium	Colorant	Gloss-ness before Fixing	Gloss-ness after Fixing
501	ink jet	Recording Paper 1	pigment ink	42	86
502	ink jet	Konica Photo-Like QP Paper	pigment ink	40	51
503	ink jet	Konica Photo-Like QP Paper	dye ink	51	63

504 Electrophotography plain paper toner 18 45

DETD . . . images after fixing, and result in neither layer peeling of the fixing member during thermal fixing, nor offsetting, a production method of the same, a thermal fixing apparatus, and an image forming method. . .

CLM What is claimed is: . . . layer has a peel strength of not less than 30 g/5 cm, and the surface layer is produced by a method comprising the steps of: coating a hardenable silicone on the base material by a dip coating or a bead coating. . . wherein the surface layer has a pencil hardness of HB or more, and the surface layer is produced by a method comprising the steps of: coating a hardenable silicone on the base material by a dip coating or a bead coating. . . 41. A producing method of fixing roller comprising a heating roller and a pressure roller for fixing an ink jet image recorded on a. . . the pressure roller, the heating roller having a base material A, the pressure roller having a base material B, the method comprising the steps of: coating a hardenable silicone onto at least one of the base material A and the base. . . 42. A producing method of fixing roller comprising a heating roller and a pressure roller for fixing an ink jet image recorded on a. . . the pressure roller, the heating roller having a base material A, the pressure roller having a base material B, the method comprising the steps of: coating a hardenable silicone onto at least one of the base material A and the base. . .

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=> S WO 2003-EP2183/PN,APFS

0 WO 2003-EP2183/PN
1 WO2003-EP2183/AP
1 WO2003-EP2183/PN
1 WO 2003-EP2183/APFS
(WO2003-EP2183/AP,PRN)
L24 1 WO 2003-EP2183/PN,APFS

=> FILE INPADOC

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	6.31	170.11
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-0.75

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19 JAN 2006 <20060119/UPLS>
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=> TRA L24 PN
L25 TRANSFER L24 1- PN : 8 TERMS
L26 8 L25

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=> S L26 AND US/PC
4428318 US/PC
L27 1 L26 AND US/PC

=> SEL PN
E1 THROUGH E1 ASSIGNED
=> S L26 AND ZA/PC
205680 ZA/PC
L28 0 L26 AND ZA/PC

=> SEL PN
L28 HAS NO ANSWERS
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L29 2936554 EN/LA
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1069019 WO/PC
L29 2936554 EN/LA
0 L26 AND WO/PC AND EN/LA
=> SEL PN

ACCESSION NUMBER: 2005:97478 USPATFULL Full-text
TITLE: Azo dye, image-forming coloring composition, ink for
ink jet recording, heat-sensitive recording material,
color toner and color filter
INVENTOR(S): Fujiwara, Toshiki, Minami-Ashigara-shi, JAPAN
PATENT ASSIGNEE(S): FUJI PHOTO FILM CO., LTD., Minami-Ashigara-shi, JAPAN
(non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005083391	A1	20050421
APPLICATION INFO.:	US 2004-961267	A1	20041012 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2003-353499	20031014
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	BURNS DOANE SWECKER & MATHIS L L P, POST OFFICE BOX 1404, ALEXANDRIA, VA, 22313-1404, US	
NUMBER OF CLAIMS:	9	
EXEMPLARY CLAIM:	1	
LINE COUNT:	2254	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An azo dye comprising a coupler having a specific structure as a coupling component, an image-forming coloring composition comprising the azo dye, an ink for ink jet recording and an ink jet recording method using the image-forming coloring composition and a heat-sensitive recording material, a color toner and a color filter formed by the image-forming coloring composition.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 12 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2005:53388 USPATFULL Full-text
TITLE: Clothlike pattern densified web
INVENTOR(S): Lindsey, Jeffrey Dean, Appleton, WI, UNITED STATES
Hermann, Michael Alan, Neenah, WI, UNITED STATES
Goulet, Mike Thomas, Neenah, WI, UNITED STATES
Hassman, Mark John, Appleton, WI, UNITED STATES
Tirimacco, Maurizio, Appleton, WI, UNITED STATES
Johnson, Jeffrey Janne, Neenah, WI, UNITED STATES
Mohr, Rebecca Catherine, Appleton, WI, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005045292	A1	20050303
APPLICATION INFO.:	US 2003-654219	A1	20030902 (10)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	KIMBERLY-CLARK WORLDWIDE, INC., 401 NORTH LAKE STREET, NEENAH, WI, 54956		

NUMBER OF CLAIMS: 91
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Page(s)
LINE COUNT: 2259

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An improved paper and the process of making an improved paper web is disclosed. The improved paper is characterized as having two regions; one is

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L31 0 L26 AND AU/PC

=> SEL PN

L31 HAS NO ANSWERS

=> S L26 AND CA/PC AND EN/LA

928821 CA/PC
L32 2936554 EN/LA
1 L26 AND CA/PC AND EN/LA

=> SEL PN

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E1 1 US2005154133/PN
E2 1 CA2478251/PN

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L23 ANSWER 11 OF 70 USPATFULL on STN

a network (or open grid) region and the other is a plurality of domes. At least a portion of either region of the paper web contains a bonding material that penetrates at least partially through the paper's thickness.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 13 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2005:19364 USPATFULL Full-text
TITLE: Wrinkle resistant composition
INVENTOR(S): Altmann, Markus Wilhelm, Brussels, BELGIUM
Hubsch, Bruno Albert Jean, Neerijse-Huldenberg, BELGIUM
Goossens, Els, Puurs, BELGIUM
Soyez, Heidi Simonne Mariette, Oostende, BELGIUM
PATENT ASSIGNEE(S): The Procter & Gamble Company (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005015888	A1	20050127
APPLICATION INFO.:	US 2004-924539	A1	20040824 (10)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 2002-111491, filed on 25 Apr 2002, PENDING A 371 of International Ser. No. WO 2000-US29769, filed on 27 Oct 2000, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	EP 1999-870223	19991027
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	THE PROCTER & GAMBLE COMPANY, INTELLECTUAL PROPERTY DIVISION, WINTON HILL TECHNICAL CENTER - BOX 161, 6110 CENTER HILL AVENUE, CINCINNATI, OH, 45224	
NUMBER OF CLAIMS:	16	
EXEMPLARY CLAIM:	1	
LINE COUNT:	2531	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB There is provided a composition comprising a lubricant, preferably a water-soluble one, and components having a deviation of fabric wrinkle recovery angle versus water of at least +15, whereby the combination imparts in-wear wrinkle resistance to the fabric treated therewith.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 14 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2005:140368 USPATFULL Full-text
TITLE: Detergent composition comprising polymeric suds volume and suds duration enhancers
INVENTOR(S): Kasturi, Chandrika, Cincinnati, OH, UNITED STATES
Schafer, Michael Gayle, Alexandria, KY, UNITED STATES
Sivik, Mark Robert, Ft. Mitchell, KY, UNITED STATES
Kluessener, Bernard William, Harrison, OH, UNITED STATES
Scheper, William Michael, Lawrenceburg, IN, UNITED STATES
Berger, Patricia Sara, Mexico City, MEXICO
Bodet, Jean-Francois, Mason, OH, UNITED STATES
PATENT ASSIGNEE(S): Procter & Gamble Company, Cincinnati, OH, UNITED STATES (U.S. corporation)

NUMBER KIND DATE
PATENT INFORMATION: US 6903064 B1 20050607
WO 2000071652 20001130
APPLICATION INFO.: US 2001-979563 20000525 (9)
WO 2000-US14564 20000525
20011114 PCT 371 date

NUMBER DATE
PRIORITY INFORMATION: US 2001-135982P 19990526 (60)
DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Mruk, Brian P
LEGAL REPRESENTATIVE: Cook, C. Brant, Wei-Berk, Caroline, Zerby, Kim W.
NUMBER OF CLAIMS: 17
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 7003

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to detergent compositions comprising polymeric suds volume and suds duration enhancers. These polymeric materials provide enhanced suds volume and suds duration during cleaning.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 15 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:324260 USPATFULL Full-text
TITLE: Fibrous materials treated with a polyvinylamine polymer
INVENTOR(S): Lindsay, Jeff, Appleton, WI, UNITED STATES
Shannon, Tom G., Neenah, WI, UNITED STATES
Goulet, Mike, Neenah, WI, UNITED STATES
Lostocco, Mike, Appleton, WI, UNITED STATES
Runge, Troy, Neenah, WI, UNITED STATES
Branham, Kelly, Winneconne, WI, UNITED STATES
Flugge, Lisa, Neenah, WI, UNITED STATES
Foster, Jamie, Appleton, WI, UNITED STATES
Lang, Fred, Neenah, WI, UNITED STATES
Sun, Tong, Neenah, WI, UNITED STATES
Garnier, Gil, Neenah, WI, UNITED STATES

NUMBER KIND DATE
PATENT INFORMATION: US 2004256066 A1 20041223
APPLICATION INFO.: US 2004-89559 A1 20040721 (10)
RELATED APPLN. INFO.: Division of Ser. No. US 2001-23489, filed on 18 Dec 2001, PENDING
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Dority & Manning, P.A., P.O. Box 1449, Greenville, SC, 29601
NUMBER OF CLAIMS: 45
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 11 Drawing Page(s)
LINE COUNT: 2916

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Textile materials, including paper webs, treated with a polyvinylamine polymer and a second agent that interacts with the polyvinylamine polymer is disclosed. The second agent added with the polyvinylamine polymer can be,

APPLICATION INFO.: US 2003-480980 A1 20031215 (10)
WO 2002-EP6877 20020621

NUMBER DATE
PRIORITY INFORMATION: DE 2001-130671 20010628
DE 2001-142138 20010830
DE 2001-147713 20010927

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Marshall Gerstein & Borun, 6300 Sears Tower, 233 South Wacker Drive, Chicago, IL, 60606-6357
NUMBER OF CLAIMS: 16
EXEMPLARY CLAIM: 1
LINE COUNT: 2281

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to novel hydrophilic swellable addition polymers comprising improved odor control, a process for their preparation and their use for absorbing aqueous fluids and a process for screening superabsorbents.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 18 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:221948 USPATFULL Full-text
TITLE: Stabilised thermoplastic moulding compounds
INVENTOR(S): Dames, Burkhardt, Heppenheimer, GERMANY, FEDERAL REPUBLIC OF
Saurer, Wolfgang, Birkenheide, GERMANY, FEDERAL REPUBLIC OF

NUMBER KIND DATE
PATENT INFORMATION: US 2004171720 A1 20040902
US 6919390 B2 20050719
APPLICATION INFO.: US 2003-480231 A1 20031210 (10)
WO 2002-EP6193 20020606

NUMBER DATE
PRIORITY INFORMATION: DE 2001-129231 20010619
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: HEIL & WEINKAUF, 1350 CONNECTICUT AVENUE, N.W., WASHINGTON, DC, 20036
NUMBER OF CLAIMS: 8
EXEMPLARY CLAIM: 1
LINE COUNT: 1313

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Thermoplastic molding compositions comprising, as substantive components

A) from 2% by weight to 99% by weight of at least one thermoplastic polymer,

B) from 1 ppb to 5% by weight of at least one polyethylenimine homo- or copolymer,

for instance, a polymeric anionic reactive compound or a polymeric aldehyde-functional compound. When incorporated into a paper web, the combination of the polyvinylamine polymer and the second agent provide improved strength properties, such as wet strength properties. In an alternative embodiment, the polyvinylamine polymer and the second polymer can be applied to a textile material for increasing the affinity of the textile material for acid dyes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 16 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:315402 USPATFULL Full-text
TITLE: Highly swellable hydrogels with acid centers
INVENTOR(S): Funk, Rudiger, Niedernhausen, GERMANY, FEDERAL REPUBLIC OF
Herfert, Norbert, Charlotte, NC, UNITED STATES
Wanior, Mariola, Erlensee, GERMANY, FEDERAL REPUBLIC OF

NUMBER KIND DATE
PATENT INFORMATION: US 2004249079 A1 20041209
APPLICATION INFO.: US 2004-490403 A1 20040323 (10)
WO 2002-EP10793 20020926

NUMBER DATE
PRIORITY INFORMATION: DE 2001-148 20011001
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: MARSHALL, GERSTEIN & BORUN LLP, 6300 SEARS TOWER, 233 S. WACKER DRIVE, CHICAGO, IL, 60606
NUMBER OF CLAIMS: 12
EXEMPLARY CLAIM: 1
LINE COUNT: 1599

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to polymer mixtures comprising hydrogel forming polymers capable of absorbing aqueous fluids, having different pH values and each being preparable by polymerization of olefinically unsaturated carboxylic acids or derivatives thereof, their preparation, use and hygiene articles containing same. More particularly, the invention relates to 2-component polymer mixtures comprising polymers having a pH range from acidic to neutral.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 17 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:233118 USPATFULL Full-text
TITLE: Acidic superabsorbent hydrogels
INVENTOR(S): Funk, Rudiger, Niedernhausen, GERMANY, FEDERAL REPUBLIC OF
Herfert, Norbert, Charlotte, NC, UNITED STATES
Wanior, Mariola, Erlensee, GERMANY, FEDERAL REPUBLIC OF
Stuven, Uwe, Bad Soden, GERMANY, FEDERAL REPUBLIC OF
Beck, Martin, Maxdorf, GERMANY, FEDERAL REPUBLIC OF

NUMBER KIND DATE
PATENT INFORMATION: US 2004180189 A1 20040916

C) from 0.05 to 2% by weight of at least one sterically hindered amine compound,

and also

D) from 0 to 70% by weight of other additives,

where the percentages by weight of components A) to D) always give 100%.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 19 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:172709 USPATFULL Full-text
TITLE: Malt processable starch compositions
INVENTOR(S): Bailey, Valerie Ann, Florence, KY, UNITED STATES
MacKey, Larry Neil, Fairfield, OH, UNITED STATES
Trokhan, Paul Dennis, Hamilton, OH, UNITED STATES
PATENT ASSIGNEE(S): The Procter & Gamble Company (U.S. corporation)

NUMBER KIND DATE
PATENT INFORMATION: US 2004132873 A1 20040708
APPLICATION INFO.: US 2003-738745 A1 20031217 (10)
RELATED APPLN. INFO.: Continuation of Ser. No. US 2001-914965, filed on 6 Sep 2001, GRANTED, Pat. No. US 6709526 A 371 of International Ser. No. WO 2000-1B233, filed on 7 Mar 2000, PENDING Continuation-in-part of Ser. No. US 1999-264401, filed on 8 Mar 1999, ABANDONED

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: THE PROCTER & GAMBLE COMPANY, INTELLECTUAL PROPERTY DIVISION, WINTON HILL TECHNICAL CENTER - BOX 161, 6110 CENTER HILL AVENUE, CINCINNATI, OH, 45224
NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 1525

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a starch composition comprising starch, a polymer that is substantially compatible with starch and has a weight-average molecular weight of at least 500,000 such that the polymer forms effective entanglements or associations with neighboring starch molecules, and preferably at least one additive to improve melt flow and melt processability. The additive may be a hydroxyl plasticizer, a hydroxyl-free plasticizer, a diluent, or mixtures thereof. The composition is melt processable on conventional thermoplastic equipment. The composition is especially suitable for uniaxial and biaxial extensional processes to make fibers, films, foams and like products.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 20 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:149755 USPATFULL Full-text
TITLE: Capping member, cleaning member, piping member, ink

INVENTOR(S): tank member, and UV curable ink jet recording apparatus fitted with the above members
Nakajima, Atsushi, Tokyo, JAPAN
PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Tokyo, JAPAN (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004113971	A1	20040617
APPLICATION INFO.:	US 2003-730478	A1	20031208 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2002-362145	20021213
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	MUSERLIAN AND LUCAS AND MERCANTI, LLP, 475 PARK AVENUE SOUTH, NEW YORK, NY, 10016	
NUMBER OF CLAIMS:	14	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	4 Drawing Page(s)	
LINE COUNT:	1377	

AB An ink jet recording apparatus is disclosed. The apparatus includes a UV ink jet recording head fitted with a nozzle to eject UV ink; a capping member to cap an ejection plane of the nozzle; a cleaning member which comes into contact with the ejection plane of the nozzle to clean the ejection plane of the nozzle; a piping member to supply a UV ink to the UV ink jet recording or to discharge the UV ink; and an ink tank member to supply the UV ink to the UV ink jet recording head or store discharge ink, in which apparatus, a weight variation ratio of at least one of the capping member, the cleaning member, the piping member and the tank member, which is determined by an immersion test in the UV ink, is less than 50 percent.

L23 ANSWER 21 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:144189 USPATFULL Full-text
TITLE: Biological active coating components, coatings, and coated surfaces
INVENTOR(S): McDaniel, C. Steven, Austin, TX, UNITED STATES
PATENT ASSIGNEE(S): REACTIVE SURFACES, LTD. (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004109853	A1	20040610
APPLICATION INFO.:	US 2003-655345	A1	20030904 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-409102P	20020909 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	C. Steven McDaniel, McDaniel & Associates, P.C., P.O. Box 2244, Austin, TX, 78767-2244	
NUMBER OF CLAIMS:	321	
EXEMPLARY CLAIM:	1	
LINE COUNT:	13694	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

	NUMBER	KIND	DATE
PRIORITY INFORMATION:	JP 2002-269170	20020913	
	JP 2002-269171	20020913	
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	SUGHRUE MION, PLLC, 2100 PENNSYLVANIA AVENUE, N.W., SUITE 800, WASHINGTON, DC, 20037		
NUMBER OF CLAIMS:	23		
EXEMPLARY CLAIM:	1		
LINE COUNT:	4520		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a sheet for ink jet recording, ink for ink jet recording, manufacturing method of ink for ink jet recording, ink set for ink jet recording, and ink jet recording method, which hardly blot even under high humidity conditions, and comprises a betaine compound having a specific structure and a compound capable of taking a betaine structure.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 24 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:60588 USPATFULL Full-text
TITLE: Textile care composition
INVENTOR(S): Oakes, John, Winsford, UNITED KINGDOM
Sugdon, Matthew, Basingstoke, UNITED KINGDOM

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004045093	A1	20040311
APPLICATION INFO.:	US 2003-450076	A1	20030609 (10)
	WO 2001-EP14378		20011203

	NUMBER	DATE
PRIORITY INFORMATION:	GB 2000-30177	20001211
	GB 2001-9142	20010411
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	UNILEVER, PATENT DEPARTMENT, 45 RIVER ROAD, EDGEWATER, NJ, 07020	
NUMBER OF CLAIMS:	12	
EXEMPLARY CLAIM:	1	
LINE COUNT:	730	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A process for the treatment of non-keratinaceous textiles, preferably cellulosic fibers, which comprises the step of treating the textiles with a composition which comprises: a self-crosslinking polymer and a nucleophilic species (preferably a polymer comprising at least one protected thiol group), and a textile compatible carrier. Under domestic washing conditions the polymer forms reactive thiol groups which are capable of causing covalent cross-linking with the polymer. Preferably, the thiol group is protected as an isothiuronium group.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 25 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:31943 USPATFULL Full-text
TITLE: Ink composition and inkjet recording method
INVENTOR(S): Ishizuka, Takahiro, Kanagawa, JAPAN

AB Disclosed herein are novel coatings and paints comprising a biomolecule composition, wherein the biomolecule composition comprises a phosphoric triester hydrolase. Also disclosed herein are methods of detoxification of a surface contaminated with an organophosphorus compound by contacting the surface with such a coating or paint. Also disclosed herein are novel coating and paint components derived from microorganisms.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 22 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:119106 USPATFULL Full-text
TITLE: Inkjet recording method
INVENTOR(S): Taguchi, Toshiki, Shizuoka, JAPAN
PATENT ASSIGNEE(S): FUJI PHOTO FILM CO., LTD. (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004090506	A1	20040513
APPLICATION INFO.:	US 2003-680088	A1	20031008 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2002-296451	20021009
	JP 2003-345444	20031003
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	SUGHRUE MION, PLLC, 2100 PENNSYLVANIA AVENUE, N.W., SUITE 800, WASHINGTON, DC, 20037	
NUMBER OF CLAIMS:	11	
EXEMPLARY CLAIM:	1	
LINE COUNT:	1681	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An inkjet recording method comprising ejecting ink droplets on an image-receiving material according to recording signals to record an image on the image-receiving material, wherein at least one of the ink and the image-receiving material comprises an acid precursor capable of releasing an acid by a chemical reaction.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 23 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:106199 USPATFULL Full-text
TITLE: Sheet for ink jet recording, ink for ink jet recording, manufacturing method of ink for ink jet recording, ink set for ink jet recording, and ink jet recording method
INVENTOR(S): Taguchi, Toshiki, Shizuoka, JAPAN
Aono, Toshiaki, Shizuoka, JAPAN
Takashima, Masanobu, Shizuoka, JAPAN
Ogawa, Manabu, Shizuoka, JAPAN

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004080555	A1	20040429
APPLICATION INFO.:	US 2003-660653	A1	20030912 (10)

	NUMBER	DATE
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Fujiwara, Toshiki, Kanagawa, JAPAN
Takahashi, Osamu, Kanagawa, JAPAN
Yamanouchi, Junichi, Kanagawa, JAPAN
Yabuki, Yoshiharu, Kanagawa, JAPAN

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004024085	A1	20040205
APPLICATION INFO.:	US 2003-352973	A1	20030129 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2002-21652	20020130
	JP 2002-22012	20020130
	JP 2002-22493	20020130

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: BURMS, DOANE, SWECKER & MATHIS, L.L.P., P.O. Box 1404, Alexandria, VA, 22313-1404
NUMBER OF CLAIMS: 11
EXEMPLARY CLAIM: 1
LINE COUNT: 3745

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB To provide an ink composition that when printed using a nozzle, does not cause clogging at the chip of the nozzle, is free from paper dependency, and when printed on an arbitrarily chosen paper, exhibits superior properties in water resistance, scratch resistance, lightfastness and ozone resistance and an inkjet recording method using it. The ink composition contains colored fine particles containing an oil-soluble polymer and an oil-soluble dye having an oxidation potential higher than 1.0 V (vs SCE), in an aqueous medium.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 26 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:7465 USPATFULL Full-text
TITLE: Poroplasts
INVENTOR(S): Surber, Mark W., Coronado, CA, UNITED STATES
Giacalone, Matthew, San Diego, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004005700	A1	20040108
APPLICATION INFO.:	US 2002-157339	A1	20020528 (10)

	NUMBER	DATE
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	
NUMBER OF CLAIMS:	18	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	2 Drawing Page(s)	
LINE COUNT:	18539	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 27 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:309942 USPATFULL Full-text
TITLE: Detergent composition comprising polymeric suds enhancers which have improved mildness and skin feel
INVENTOR(S): Kasturi, Chandrika, Cincinnati, OH, United States
Schafer, Michael Gayle, Alexandria, KY, United States
Spears, Marsha Jean, Ft. Thomas, KY, United States
Hutton, III, Howard David, Oregonia, OH, United States
Sivik, Mark Robert, Ft. Mitchell, KY, United States
Kluesener, Bernard William, Harrison, OH, United States
Schepner, William Michael, Lawrenceburg, IN, United States
PATENT ASSIGNEE(S): Procter & Gamble Company, Cincinnati, OH, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6827795	B1	20041207
	WO 2000071658		20001130
APPLICATION INFO.:	US 2001-979562		20011114 (9)
	WO 2000-US14405		20000525
			20011114 PCT 371 date

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-13588P	19990526 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Mruk, Brian P	
LEGAL REPRESENTATIVE:	Wei-Berk, Caroline, Cook, C. Brant, Zerby, Kim W.	
NUMBER OF CLAIMS:	29	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	0 Drawing Figure(s); 0 Drawing Page(s)	
LINE COUNT:	5424	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Method of improving the skin feel or mildness to the skin of various detergent compositions, such as hand dish washing compositions, hand laundry bars, shampoos and other personal cleansing compositions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 28 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2004:72460 USPATFULL Full-text
TITLE: Melt processable starch compositions
INVENTOR(S): Bailey, Valerie Ann, Florence, KY, United States
Mackey, Larry Neil, Fairfield, OH, United States
Trokhman, Paul Dennis, Hamilton, OH, United States
PATENT ASSIGNEE(S): The Procter & Gamble Company, Cincinnati, OH, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6709526	B1	20040323
APPLICATION INFO.:	US 2001-914965		20010906 (9)
	WO 2000-18233		20000307
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1999-264401, filed on 8 Mar 1999, now abandoned		

Berkley, Neil, San Diego, CA, UNITED STATES
Surber, Mark W., Coronado, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003224444	A1	20031204
APPLICATION INFO.:	US 2002-157491	A1	20020528 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	
NUMBER OF CLAIMS:	19	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	2 Drawing Page(s)	
LINE COUNT:	18559	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 31 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:318625 USPATFULL Full-text
TITLE: Reverse screening and target identification with minicells
INVENTOR(S): Surber, Mark W., Coronado, CA, UNITED STATES
Berkley, Neil, San Diego, CA, UNITED STATES
Gerhart, William, La Mesa, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003224369	A1	20031204
APPLICATION INFO.:	US 2002-157171	A1	20020528 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	
NUMBER OF CLAIMS:	20	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	2 Drawing Page(s)	
LINE COUNT:	18610	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Bell, Mark L.
ASSISTANT EXAMINER: Hailey, Patricia L.
LEGAL REPRESENTATIVE: Cook, C. Brant, Vitenberg, Vladimir, Weirich, David M.
NUMBER OF CLAIMS: 21
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Figure(s); 3 Drawing Page(s)
LINE COUNT: 1543

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a starch composition comprising starch, a polymer that is substantially compatible with starch and has a weight-average molecular weight of at least 500,000 such that the polymer forms effective entanglements or associations with neighboring starch molecules, and preferably at least one additive to improve melt flow and melt processability. The additive may be a hydroxyl plasticizer, a hydroxyl-free plasticizer, a diluent, or mixtures thereof. The composition is melt processable on conventional thermoplastic equipment. The composition is especially suitable for uniaxial and biaxial extensional processes to make fibers, films, foams and like products.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 29 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:330124 USPATFULL Full-text
TITLE: Minicell-based screening for compounds and proteins that modulate the activity of signalling proteins
INVENTOR(S): Surber, Mark W., Coronado, CA, UNITED STATES
Berkley, Neil, San Diego, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003232335	A1	20031218
APPLICATION INFO.:	US 2002-157317	A1	20020528 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18564

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 30 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:318700 USPATFULL Full-text
TITLE: Antibodies to native conformations of membrane proteins
INVENTOR(S): Sabbadini, Roger A., Lakeside, CA, UNITED STATES

L23 ANSWER 32 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:312291 USPATFULL Full-text
TITLE: Minicell-based bioremediation
INVENTOR(S): Segall, Anca M., San Diego, CA, UNITED STATES
Klepper, Robert, San Diego, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003219888	A1	20031127
APPLICATION INFO.:	US 2002-157418	A1	20020528 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-154951, filed on 24 May 2002, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
	US 2001-293566P	20010524 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18632

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 33 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:311814 USPATFULL Full-text
TITLE: Methods of making pharmaceutical compositions with minicells
INVENTOR(S): Sabbadini, Roger A., Lakeside, CA, UNITED STATES
Klepper, Robert, San Diego, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003219408	A1	20031127
APPLICATION INFO.:	US 2002-157320	A1	20020528 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-154951, filed on 24 May 2002, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
	US 2001-293566P	20010524 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)

LINE COUNT: 18632
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 34 OF 70 USPTATFULL on STN
ACCESSION NUMBER: 2003:300375 USPTATFULL Full-text
TITLE: Minicell-based delivery agents
INVENTOR(S): Sabbadini, Roger A., Lakeside, CA, UNITED STATES
Klepper, Robert, San Diego, CA, UNITED STATES
Surber, Mark W., Coronado, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002-11599	A1	20031113
APPLICATION INFO.:	US 2002-157106	A1	20020528 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-154951, filed on 24 May 2002, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
DOCUMENT TYPE:	US 2001-293566P	20010524 (60)
FILE SEGMENT:	UTILITY	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	

NUMBER OF CLAIMS: 12
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18671

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 35 OF 70 USPTATFULL on STN
ACCESSION NUMBER: 2003:299865 USPTATFULL Full-text
TITLE: Minicell-based selective absorption
INVENTOR(S): Berkley, Neil, San Diego, CA, UNITED STATES
Sabbadini, Roger A., Lakeside, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003211086	A1	20031113
APPLICATION INFO.:	US 2002-157073	A1	20020528 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-295566P	20010605 (60)
	US 2002-359843P	20020225 (60)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
DOCUMENT TYPE:	UTILITY	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	

NUMBER OF CLAIMS: 12
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18551

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 38 OF 70 USPTATFULL on STN
ACCESSION NUMBER: 2003:288653 USPTATFULL Full-text
TITLE: Methods of minicell-based delivery
INVENTOR(S): Sabbadini, Roger A., Lakeside, CA, UNITED STATES
Berkley, Neil, San Diego, CA, UNITED STATES
Klepper, Robert, San Diego, CA, UNITED STATES
Surber, Mark W., Coronado, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003203411	A1	20031030
APPLICATION INFO.:	US 2002-156792	A1	20020528 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-295566P	20010605 (60)
	US 2002-359843P	20020225 (60)

	NUMBER	DATE
DOCUMENT TYPE:	UTILITY	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18582

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 39 OF 70 USPTATFULL on STN
ACCESSION NUMBER: 2003:288179 USPTATFULL Full-text
TITLE: Minicell-based diagnostics
INVENTOR(S): Sabbadini, Roger A., Lakeside, CA, UNITED STATES
Klepper, Robert, San Diego, CA, UNITED STATES
Berkley, Neil, San Diego, CA, UNITED STATES

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614

NUMBER OF CLAIMS: 17
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18553

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 36 OF 70 USPTATFULL on STN
ACCESSION NUMBER: 2003:294815 USPTATFULL Full-text
TITLE: Pharmaceutical compositions with minicells
INVENTOR(S): Berkley, Neil, San Diego, CA, UNITED STATES
Klepper, Robert, San Diego, CA, UNITED STATES
Sabbadini, Roger A., Lakeside, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003207833	A1	20031106
APPLICATION INFO.:	US 2002-156811	A1	20020528 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
DOCUMENT TYPE:	UTILITY	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18585

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 37 OF 70 USPTATFULL on STN
ACCESSION NUMBER: 2003:288723 USPTATFULL Full-text
TITLE: Conjugated minicells
INVENTOR(S): Surber, Mark W., Coronado, CA, UNITED STATES
Klepper, Robert, San Diego, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003203481	A1	20031030
APPLICATION INFO.:	US 2002-157213	A1	20020528 (10)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003202937	A1	20031030
APPLICATION INFO.:	US 2002-157178	A1	20020528 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-295566P	20010605 (60)
	US 2002-359843P	20020225 (60)

	NUMBER	DATE
DOCUMENT TYPE:	UTILITY	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	

NUMBER OF CLAIMS: 19
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18527

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 40 OF 70 USPTATFULL on STN
ACCESSION NUMBER: 2003:282746 USPTATFULL Full-text
TITLE: Membrane to membrane delivery
INVENTOR(S): Surber, Mark W., Coronado, CA, UNITED STATES
Sabbadini, Roger A., Lakeside, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003199089	A1	20031023
APPLICATION INFO.:	US 2002-157318	A1	20020528 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-295566P	20010605 (60)
	US 2002-359843P	20020225 (60)

	NUMBER	DATE
DOCUMENT TYPE:	UTILITY	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18530

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 41 OF 70 USPTATFULL on STN

ACCESSION NUMBER: 2003:282745 USPATFULL Full-text
TITLE: Minicell-based gene therapy
INVENTOR(S): Sabbadini, Roger A., Lakeside, CA, UNITED STATES
Berkley, Neil, San Diego, CA, UNITED STATES
Surber, Mark W., Coronado, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003199088	A1	20031023
APPLICATION INFO.:	US 2002-156902	A1	20020528 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-295566P	20010605 (60)
	US 2002-359843P	20020225 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 15300

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 42 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:282662 USPATFULL Full-text
TITLE: Solid supports with minicells
INVENTOR(S): Sabbadini, Roger, Lakeside, CA, UNITED STATES
Klepper, Robert, San Diego, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003199005	A1	20031023
APPLICATION INFO.:	US 2002-157166	A1	20020528 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-154951, filed on 24 May 2002, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
	US 2001-293566P	20010524 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614	

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18494

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic

DOCUMENT TYPE: US 2001-293566P 20010524 (60)
UTILITY
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET,
FOURTEENTH FLOOR, IRVINE, CA, 92614

NUMBER OF CLAIMS: 15
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18533

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 45 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:277269 USPATFULL Full-text
TITLE: Stabilized thermoplastic moulding materials
INVENTOR(S): Dames, Burkhardt, Heppenheim, GERMANY, FEDERAL REPUBLIC OF
Ziegler, Bernd, Gonnheim, GERMANY, FEDERAL REPUBLIC OF

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003195296	A1	20031016
APPLICATION INFO.:	US 2002-312780	A1	20021230 (10)
	WO 2001-EP7129		20010622

	NUMBER	DATE
PRIORITY INFORMATION:	DE 2000-10030553	20000629
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	NEIL & WEINKAUF, 1350 CONNECTICUT AVENUE, N.W., WASHINGTON, DC, 20036	

NUMBER OF CLAIMS: 8
EXEMPLARY CLAIM: 1
LINE COUNT: 1337

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to thermoplastic moulding materials containing A) 29 to (100 weight % minus 1 ppb) of at least one thermoplastic polymer. B) 1 ppb to 1 weight % or at least one polyethyleneimine homopolymer of copolymer, as well as C) 0 to 70 weight % of other additives, as the essential constituents thereof. The weight percent of constituents A) to C) amounts to 100% in every case.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 46 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:276773 USPATFULL Full-text
TITLE: Minicell compositions and methods
INVENTOR(S): Surber, Mark W., Coronado, CA, UNITED STATES
Sabbadini, Roger A., Lakeside, CA, UNITED STATES

NUMBER	KIND	DATE
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and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 43 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:282653 USPATFULL Full-text
TITLE: Minicell libraries
INVENTOR(S): Surber, Mark W., Coronado, CA, UNITED STATES
Berkley, Neil, San Diego, CA, UNITED STATES
Gerhart, William, La Mesa, CA, UNITED STATES
Sabbadini, Roger A., Lakeside, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003198996	A1	20031023
APPLICATION INFO.:	US 2002-157147	A1	20020528 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-154951, filed on 24 May 2002, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-293566P	20010524 (60)
	US 2002-359843P	20020225 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET,
FOURTEENTH FLOOR, IRVINE, CA, 92614

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18482

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 44 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:282652 USPATFULL Full-text
TITLE: Forward screening with minicells
INVENTOR(S): Sabbadini, Roger A., Lakeside, CA, UNITED STATES
Berkley, Neil, San Diego, CA, UNITED STATES
Surber, Mark W., Coronado, CA, UNITED STATES
Gerhart, William, La Mesa, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003198995	A1	20031023
APPLICATION INFO.:	US 2002-156831	A1	20020528 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-154951, filed on 24 May 2002, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)

PATENT INFORMATION: US 2003194798 A1 20031016
APPLICATION INFO.: US 2002-154951 A1 20020524 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-293566P	20010524 (60)
	US 2002-359843P	20020225 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET,
FOURTEENTH FLOOR, IRVINE, CA, 92614

NUMBER OF CLAIMS: 18
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18583

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 47 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:276689 USPATFULL Full-text
TITLE: Minicell-based transformation
INVENTOR(S): Sabbadini, Roger A., Lakeside, CA, UNITED STATES
Berkley, Neil, San Diego, CA, UNITED STATES
Surber, Mark W., Coronado, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003194714	A1	20031016
APPLICATION INFO.:	US 2002-157299	A1	20020528 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-295566P	20010605 (60)
	US 2002-359843P	20020225 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET,
FOURTEENTH FLOOR, IRVINE, CA, 92614

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18595

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 48 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:271146 USPATFULL Full-text
TITLE: Minicell-producing parent cells

INVENTOR(S): Surber, Mark W., Coronado, CA, UNITED STATES
Sabbadini, Roger A., Lakeside, CA, UNITED STATES
Segall, Anca M., San Diego, CA, UNITED STATES
Berkley, Neil, San Diego, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003190749	A1	20031009
APPLICATION INFO.:	US 2002-157215	A1	20020528 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-154951, filed on 24 May 2002, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
	US 2001-293566P	20010524 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18577

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 49 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:271080 USPATFULL Full-text
TITLE: Minicell-based rational drug design
INVENTOR(S): Sabbadini, Roger A., Lakeside, CA, UNITED STATES
Surber, Mark W., Coronado, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003190683	A1	20031009
APPLICATION INFO.:	US 2002-157302	A1	20020528 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-154951, filed on 24 May 2002, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
	US 2001-293566P	20010524 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614

NUMBER OF CLAIMS: 15
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18539

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KEIL & WEINKAUF, 1350 CONNECTICUT AVENUE, N.W., WASHINGTON, DC, 20036

NUMBER OF CLAIMS: 6
EXEMPLARY CLAIM: 1
LINE COUNT: 874

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Thermoplastic molding compositions comprising, as substantive components,

A) from 5% by weight to (99.99% by weight minus 1 ppb), based on components A) to D), of a polyoxymethylene homo- or copolymer,

B) from 1 ppb to 1% by weight, based on the molding composition made from A) to D), of at least one polyethyleneimine homo- or copolymer,

C) from 0.01 to 15% by weight of carbon black, and

D) from 0 to 80% by weight of other additives,

where the total of percentages by weight of components A) to D) is always 100%.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 52 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:242915 USPATFULL Full-text
TITLE: Fixing belt, fixing roller, production method thereof, fixing apparatus and image fixing method utilizing the apparatus
INVENTOR(S): Fukuda, Teruyuki, Tokyo, JAPAN
Kida, Shuji, Iruma-shi, JAPAN
Suzuki, Shinichi, Saitama-shi, JAPAN
Ohya, Hidenobu, Tokyo, JAPAN
Kaga, Makoto, Tokyo, JAPAN

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003169323	A1	20030911
APPLICATION INFO.:	US 6935733	B2	20050830
	US 2003-360352	A1	20030207 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2002-35205	20020213

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: MUSERLIAN AND LUCAS AND MERCANTI, LLP, 600 THIRD AVENUE, NEW YORK, NY, 10016

NUMBER OF CLAIMS: 32
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Page(s)
LINE COUNT: 2274

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 50 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:270998 USPATFULL Full-text
TITLE: Target display on minicells
INVENTOR(S): Sabbadini, Roger A., Lakeside, CA, UNITED STATES
Berkley, Neil, San Diego, CA, UNITED STATES
Surber, Mark W., Coronado, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003190601	A1	20031009
APPLICATION INFO.:	US 2002-157096	A1	20020528 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-154951, filed on 24 May 2002, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
	US 2001-293566P	20010524 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18581

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 51 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:258514 USPATFULL Full-text
TITLE: Stabilised black polyoxymethylene molding materials
INVENTOR(S): Dames, Burkhardt, Heppenheim, GERMANY, FEDERAL REPUBLIC OF

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003181567	A1	20030925
APPLICATION INFO.:	US 6878764	B2	20050412
	US 2002-312543	A1	20021230 (10)
	WO 2001-EP7130		20010622

	NUMBER	DATE
PRIORITY INFORMATION:	DE 2000-10030635	20000629

DOCUMENT TYPE: Utility

AB A fixing belt for fixing an ink-jet image recorded on an ink-jet recording material, the fixing belt comprising a base material having thereon a base-surface modifying layer and a releasing layer in the order, wherein the base-surface modifying layer has a pencil hardness of HB or a higher hardness and the releasing layer comprises a silicone resin.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 53 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:238122 USPATFULL Full-text
TITLE: Minicell-based transfection
INVENTOR(S): Sabbadini, Roger A., Lakeside, CA, UNITED STATES
Berkley, Neil, San Diego, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003166279	A1	20030904
APPLICATION INFO.:	US 2002-157391	A1	20020528 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-154951, filed on 24 May 2002, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-359843P	20020225 (60)
	US 2001-293566P	20010524 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614

NUMBER OF CLAIMS: 18
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 18548

AB The invention provides compositions and methods for the production of achromosomal and anucleate cells useful for applications such as diagnostic and therapeutic uses, as well as research tools and agents for drug discovery.

L23 ANSWER 54 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:237942 USPATFULL Full-text
TITLE: Minicells comprising membrane proteins
INVENTOR(S): Sabbadini, Roger A., Lakeside, CA, UNITED STATES
Surber, Mark W., Coronado, CA, UNITED STATES
Berkley, Neil, San Diego, CA, UNITED STATES
Segall, Anca M., San Diego, CA, UNITED STATES
Klepper, Robert, San Diego, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003166099	A1	20030904
APPLICATION INFO.:	US 2002-157305	A1	20020528 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-295566P	20010605 (60)
	US 2002-359843P	20020225 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET,
FOURTEENTH FLOOR, IRVINE, CA, 92614
NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 1650
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides compositions and methods for the production of
achromosomal and anucleate cells useful for applications such as diagnostic
and therapeutic uses, as well as research tools and agents for drug
discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 55 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:197966 USPATFULL Full-text
TITLE: Polyvinylamine treatments to improve dyeing of
cellulosic materials
INVENTOR(S): Sun, Tong, Neenah, WI, UNITED STATES
Lindsay, Jeff, Appleton, WI, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003135939	A1	20030724
APPLICATION INFO.:	US 2001-22823	A1	20011218 (10)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	Timothy A. Cassidy, Esq., Dority & Manning, Attorneys at Law, P.A., P.O. Box 1449, Greenville, SC, 29602		

NUMBER OF CLAIMS: 32
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 11 Drawing Page(s)
LINE COUNT: 2853
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Textile materials, including paper webs, treated with a polyvinylamine
polymer and a second agent that interacts with the polyvinylamine polymer is
disclosed. The second agent added with the polyvinylamine polymer can be,
for instance, a polymeric anionic reactive compound or a polymeric aldehyde-
functional compound. When incorporated into a paper web, the combination of
the polyvinylamine polymer and the second agent provide improved strength
properties, such as wet strength properties. In an alternative embodiment,
the polyvinylamine polymer and the second polymer can be applied to a
textile material for increasing the affinity of the textile material for
acid dyes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 56 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:195360 USPATFULL Full-text
TITLE: Absorbent article
INVENTOR(S): Whitmore, Darryl L., Chesapeake, VA, UNITED STATES
Engelhardt, Friedrich, Frankfurt/Main, GERMANY, FEDERAL
REPUBLIC OF

	NUMBER	KIND	DATE
--	--------	------	------

properties, such as wet strength properties. In an alternative embodiment,
the polyvinylamine polymer and the second polymer can be applied to a
textile material for increasing the affinity of the textile material for
acid dyes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 58 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:139336 USPATFULL Full-text
TITLE: Fixing belt, fixing roller, production method
thereof, fixing apparatus and image fixing
method utilizing the apparatus
INVENTOR(S): Kaga, Makoto, Tokyo, JAPAN
Kida, Shuji, Tokyo, JAPAN
Suzuki, Shinichi, Tokyo, JAPAN
Ohya, Hidenobu, Tokyo, JAPAN
Fukuda, Teruyuki, Tokyo, JAPAN
Miyamoto, Fujio, Tokyo, JAPAN

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003095171	A1	20030522
APPLICATION INFO.:	US 6902266	B2	20050607
	US 2002-206310	A1	20020726 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2001-237685	20010806
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	BIERMAN MUSERLIAN AND LUCAS, 600 THIRD AVENUE, NEW YORK, NY, 10016	

NUMBER OF CLAIMS: 48
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Page(s)
LINE COUNT: 2175

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A fixing belt or a fixing roller for fixing an ink jet image recorded on an
ink jet recording material by heat, the fixing belt comprising a base
material having thereon a surface layer contacting the ink jet recording
material during fixing, the fixing roller comprising a heating roller and a
pressure roller having base materials A and B, respectively, at least one of
the heating roller and the pressure roller having a surface layer contacting
the ink jet recording material during fixing, wherein the surface layer has
a peel strength of not less than 30 g/5 cm or a pencil hardness of HB or
more, and the surface layer is produced by a method comprising the steps of:
coating a hardenable silicone on the base material by a dip coating; and
hardening the coated hardenable silicone by heat.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 59 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:133837 USPATFULL Full-text
TITLE: Replenishing developer and developing method
INVENTOR(S): Okado, Kenji, Ushiku-shi, JAPAN
Mikuriya, Yushu, Numazu-shi, JAPAN
Yoshizaki, Kazumi, Toride-shi, JAPAN
Ikeda, Naotaka, Toride-shi, JAPAN

PATENT INFORMATION: US 2003135172 A1 20030717
APPLICATION INFO.: US 2002-300082 A1 20021120 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-341254P	20011220 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	MARSHALL, GERSTEIN & BORUN, 6300 SEARS TOWER, 233 SOUTH WACKER, CHICAGO, IL, 60606-6357	

NUMBER OF CLAIMS: 16
EXEMPLARY CLAIM: 1
LINE COUNT: 2778
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A storage layer obtainable by a process including (a) forming a sprayable
blend containing one or more superabsorbent forming monomers; superabsorbent
polymer particles; water; and one or more initiators; (b) applying the
sprayable blend to a fibrous web; and (c) subjecting the sprayed fibrous web
to conditions under which the superabsorbent forming monomer polymerizes.
The storage layer is used in absorbent articles to store aqueous fluids.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 57 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:192162 USPATFULL Full-text
TITLE: Fibrous materials treated with a polyvinylamine polymer
INVENTOR(S): Lindsay, Jeff, Appleton, WI, UNITED STATES
Shannon, Tom G., Neenah, WI, UNITED STATES
Goulet, Mike, Neenah, WI, UNITED STATES
Lostocco, Mike, Appleton, WI, UNITED STATES
Runge, Troy, Neenah, WI, UNITED STATES
Branham, Kelly, Winneconne, WI, UNITED STATES
Flugge, Lisa, Neenah, WI, UNITED STATES
Foster, Jamie, Appleton, WI, UNITED STATES
Lang, Fred, Neenah, WI, UNITED STATES
Sun, Tong, Neenah, WI, UNITED STATES
Garnier, Gil, Neenah, WI, UNITED STATES
Kimberly-Clark Worldwide, Inc. (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003131962	A1	20030717
APPLICATION INFO.:	US 6824650	B2	20041130
DOCUMENT TYPE:	US 2001-23489	A1	20011218 (10)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	Timothy A. Cassidy, Esq., Dority & Manning, Attorneys at Law, P.A., P.O. Box 1449, Greenville, SC, 29602		

NUMBER OF CLAIMS: 45
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 11 Drawing Page(s)
LINE COUNT: 2910
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Textile materials, including paper webs, treated with a polyvinylamine
polymer and a second agent that interacts with the polyvinylamine polymer is
disclosed. The second agent added with the polyvinylamine polymer can be,
for instance, a polymeric anionic reactive compound or a polymeric aldehyde-
functional compound. When incorporated into a paper web, the combination of
the polyvinylamine polymer and the second agent provide improved strength

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003091922	A1	20030515
APPLICATION INFO.:	US 6936394	B2	20050830
	US 2002-81844	A1	20020225 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2001-542322001	20010228
	JP 2001-542332001	20010228
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	FITZPATRICK CELLA HARPER & SCINTO, 30 ROCKEFELLER PLAZA, NEW YORK, NY, 10112	

NUMBER OF CLAIMS: 27
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Page(s)
LINE COUNT: 3446
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An electrostatic latent image on an image-bearing member is developed with a
two-component developer comprising a toner and a carrier stored in a
developer vessel while supplying as required a replenishing developer to the
developer vessel. The replenishing developer comprises 1 weight part of a
carrier and 2-50 weight parts of a toner, wherein the carrier is a magnetic
fine particle-dispersed resin carrier comprising at least inorganic compound
particles and a carrier binder resin, and the toner has a weight-average
particle size of 3 to 10 μ m and contains 1 to 40 weight % of solid wax.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 60 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:50960 USPATFULL Full-text
TITLE: Image making medium
INVENTOR(S): Hyman, Sydney, New York, NY, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003035917	A1	20030220
APPLICATION INFO.:	US 2002-170503	A1	20020614 (10)
RELATED APPL. INFO.:	Continuation of Ser. No. US 2002-12259, filed on 14 Jun 2002, PENDING Continuation-in-part of Ser. No. WO 2000-US16111, filed on 12 Jun 2000, UNKNOWN		

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-138694P	19990611 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	Sydney Hyman, 51 Greene Street, #3, New York, NY, 10013	

NUMBER OF CLAIMS: 24
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 90 Drawing Page(s)
LINE COUNT: 24304
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to an image support medium for creation of an
aesthetic image that is an work or object for display. This support medium
includes a polymer in an amount sufficient to enable the image to have at
least one aesthetic element. In different embodiments, the image support

medium is an image support stabilizer, the polymer is a synthetic absorbent or conductive polymer, or the polymer is a transparent or synthetic translucent polymer and a property of this transparent or translucent polymer is enhanced to facilitate the creation or preservation of the image by at least one stabilizer. The invention also relates to a method for preparing this image support medium. The method includes forming a reaction mixture comprising a monomer in an amount sufficient to provide or enable the image to have an aesthetic element, and processing the reaction mixture into a 2- or 3-dimensional shape.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 61 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2003:17299 USPATFULL Full-text
TITLE: Silver halide photographic emulsion
INVENTOR(S): Kikuchi, Makoto, Minami-Ashigara-shi, JAPAN
Furusawa, Genichi, Minami-Ashigara-shi, JAPAN
PATENT ASSIGNEE(S): FUJII PHOTO FILM CO., LTD. (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003013051	A1	20030116
	US 6632595	B2	20031014
APPLICATION INFO.:	US 2002-94988	A1	20020312 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2001-70606	20010313
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	Sughrue Mion, PLLC, 2100 Pennsylvania Avenue, N.W., Washington, DC, 20037-3213	
NUMBER OF CLAIMS:	17	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	5 Drawing Page(s)	
LINE COUNT:	4222	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A silver halide photographic emulsion comprising grains, wherein 50% or more (numerical ratio) of all the grains are occupied by tabular grains meeting the requirements (i) to (iii):

(i) a silver iodobromide or silver iodochlorobromide tabular grain having (111) faces as main planes and having two parallel twin planes;

(ii) a thickness of 0.12 μ m or less; and

(iii) the tabular grains have a grain fringe portion meeting the requirements:

(a) the grain fringe portion has a phase of high silver iodide content in either of an upper region and a lower region than a region sandwiched between the two twin planes, and

(b) "A", which represents the maximum local silver iodide content (mol %) in the phase of high silver iodide content, satisfies the relationship: $A - 6.02B$, wherein "B" represents local silver iodide content (mol %) in an opposite part to the phase of high silver iodide content.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 62 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2002:241139 USPATFULL Full-text
TITLE: Domestic treatment of fabrics with film-forming materials and blowing agents
INVENTOR(S): Dominguez, Arturo Luis Casado, Brussels, BELGIUM
Altmann, Markus Wilhelm, Brussels, BELGIUM
Hubsch, Bruno Albert Jean, Neerijse-Huldenberg, BELGIUM
PATENT ASSIGNEE(S): The Procter & Gamble Company (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002130295	A1	20020919
	US 6723253	B2	20040420
APPLICATION INFO.:	US 2001-40103	A1	20011019 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	EP 2000-870249	20001027
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	THE PROCTER & GAMBLE COMPANY, INTELLECTUAL PROPERTY DIVISION, WINTON HILL TECHNICAL CENTER - BOX 161, 6110 CENTER HILL AVENUE, CINCINNATI, OH, 45224	

NUMBER OF CLAIMS: 14
EXEMPLARY CLAIM: 1
LINE COUNT: 1464

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Fabrics are treated with a film-forming material and a blowing agent, typically ammonium carbonate or bicarbonate, and ironed. The fabrics thus acquire dry wrinkle resistance, in addition to the benefit provided by the film-forming material.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 63 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2002:227771 USPATFULL Full-text
TITLE: Method for preparing image-recorded material
INVENTOR(S): Yamada, Makoto, Kanagawa, JAPAN
Yabuki, Yoshiharu, Kanagawa, JAPAN

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002122922	A1	20020905
APPLICATION INFO.:	US 2001-26974	A1	20011227 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2000-398060	20001227
	JP 2001-271991	20010907
DOCUMENT TYPE:	Utility	

FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Platon N. Mandros, BURNS, DOANE, SWECKER & MATHIS, L.L.P., P.O. Box 1404, Alexandria, VA, 22313-1404
NUMBER OF CLAIMS: 13
EXEMPLARY CLAIM: 1
LINE COUNT: 2560

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method comprising: recording an image on a material by an ink jet recording system using water-based ink comprising a colorant; transferring a layer comprising a radiation-curing compound that is capable of being a resin at curing from a protective layer-imparting material comprising a support and the layer, the layer being capable of being released from the protective layer-imparting material, to a surface of the material; and curing the layer by irradiation of a radiation to form a protective layer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 64 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2002:118751 USPATFULL Full-text
TITLE: Ink jet image recording method
INVENTOR(S): Nishita, Nobuhiro, Kanagawa, JAPAN

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002060727	A1	20020523
	US 6604819	B2	20030812
APPLICATION INFO.:	US 2001-963654	A1	20010927 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2000-297365	20000928
	JP 2000-299465	20000929

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Platon N. Mandros, BURNS, DOANE, SWECKER & MATHIS, L.L.P., P.O. Box 1404, Alexandria, VA, 22313-1404

NUMBER OF CLAIMS: 24
EXEMPLARY CLAIM: 1
LINE COUNT: 3072

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An ink jet image recording method comprising: forming an image by ejecting an ink jet recording ink composition comprising one of a water-soluble dye and an oil-soluble dye onto an image-receiving material; and applying a solution comprising a dispersion of fine polymer particles to the image-receiving material simultaneously with or after the forming of an image or an ink jet image recording method comprising: applying a solution comprising a dispersion of fine polymer particles to an image-receiving material; and ejecting an ink jet recording ink composition comprising one of a water-soluble dye and an oil-soluble dye onto the image-receiving material for formation of an image, while the dispersion of fine polymer particles on the image-receiving material maintains a condition in which the ink jet recording ink composition is able to pass therethrough.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 65 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2002:48664 USPATFULL Full-text
TITLE: Compostable, degradable plastic compositions and

articles thereof
INVENTOR(S): Holy, Norman L., Yardley, PA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002028857	A1	20020307
APPLICATION INFO.:	US 2001-820916	A1	20010330 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-193449P	20000331 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	BIRCH STEWART KOLASCH & BIRCH, PO BOX 747, FALLS CHURCH, VA, 22040-0747	
NUMBER OF CLAIMS:	96	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	3 Drawing Page(s)	
LINE COUNT:	3903	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to thermoplastic compositions which are degradable and/or compostable, the method of preparation of the degradable and/or compostable compositions and use of the degradable and/or compostable compositions in a monofilament, shaped article or film, or may be used as a coating, e.g., of paper, to achieve a stronger article. These compositions have the advantage over existing biodegradable and compostable compositions by exhibiting a higher dimensional stability and comparatively low cost.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 66 OF 70 USPATFULL on STN
ACCESSION NUMBER: 2000:174292 USPATFULL Full-text
TITLE: Magnetic coated carrier two-component type developer and developing method
INVENTOR(S): Baba, Yoshinobu, Yokohama, Japan
Ikeda, Takeshi, Shizuoka-ken, Japan
Sato, Yuku, Numazu, Japan
Itabashi, Hitoshi, Yokohama, Japan
Tokunaga, Yuzo, Yokohama, Japan
PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Tokyo, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6165563		20001226
APPLICATION INFO.:	US 1999-422105		19991020 (9)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1997-826684, filed on 7 Apr 1997, now abandoned		

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1996-85240	19960408
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Martin, Roland	
LEGAL REPRESENTATIVE:	Fitzpatrick, Cella, Harper & Scinto	
NUMBER OF CLAIMS:	89	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	4 Drawing Figure(s); 3 Drawing Page(s)	

LINE COUNT: 2860

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A magnetic coated carrier suitable for constituting a two-component type developer for use in electrophotography is composed of magnetic coated carrier particles comprising magnetic coated carrier particles comprising magnetic carrier core particles each comprising a binder resin and metal oxide particles, and a coating layer surface-coating each carrier core particle. The metal oxide particles have been subjected to a surface lipophilicity-imparting treatment. The magnetic carrier core particles have a resistivity of at least 1×10^{10} ohm.cm. and the magnetic coated carrier has a resistivity of at least 1×10^{10} ohm.cm. The magnetic coated carrier has a particle size distribution such that (i) it has a number-average particle size D_n of 5-100 μ m, (ii) it satisfies a relationship of $D_n/D_{0.35}$, wherein σ denotes a standard deviation of number-basis particle size distribution of the carrier, and (iii) it contains at most 25% by number of particles having particle sizes of at most $D_n/2/3$.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 67 OF 70 USPATFULL on STN

ACCESSION NUMBER: 2000:161191 USPATFULL Full-text

TITLE: Ethylenimine-containing resins, manufacture, and use for chemical separations
INVENTOR(S): Bi.cedilla.ak, Niyazi, Istanbul, Turkey
PATENT ASSIGNEE(S): AAG Industries, Inc., Dorchester, MA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6153795		20001128
APPLICATION INFO.:	US 1997-906622		19970807 (8)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1996-23490P	19960809 (60)
	US 1997-44202P	19970422 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Padmanabhan, Sreeni	
NUMBER OF CLAIMS:	6	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	29 Drawing Figure(s); 18 Drawing Page(s)	
LINE COUNT:	1302	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Water-insoluble polymer resins containing ethylenediamine subunits which are N-substituted with a functional group chosen from the group consisting of --H, --CH₃.sub.2, --CH₃.sub.2 PO.sub.3 H, and --CH₃.sub.3, or which are N-quaternized as --(N(CH₃.sub.3).sub.2.sup.sym.crcilbar. OH)--, and polysalts of these. The use of such resins in separating nitrites, organic chlorine compounds, (heavy) metal ions including radioactive metal ions, counteranions of metal ions, and aliphatic and aromatic aldehydes from dilute aqueous solutions, especially at low concentrations. A method of synthesizing epoxy carbamate resins without violent reaction by inverse suspension condensation in cold liquid paraffin or toluene, preferably with dimethyl formamide or 1-methyl-2-pyrrolidone as co-solvents.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

RELATED APPLN. INFO.: Continuation of Ser. No. US 1996-604900, filed on 22 Feb 1996, now abandoned

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1995-60119	19950224
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Le, Hoa Van	
LEGAL REPRESENTATIVE:	Sughrue, Mion, Zinn, Macpeak & Seas, PLLC	
NUMBER OF CLAIMS:	9	
EXEMPLARY CLAIM:	1	
LINE COUNT:	1826	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Provided are a liquid color developer suitable for silver halide color photosensitive material, preferably for a silver halide color photosensitive material having a magnetic recording layer on a support, wherein the developer comprises a single solution containing at least one compound represented by the following formula (I) and having specific gravity of from 1.05 to 1.13; and a processing method using the aforementioned liquid color developer:

HO--N(R)--L--A (I)

wherein L represents an unsubstituted or substituted alkylene group; A represents a carboxyl group, a sulfo group, a phosphono group, a hydroxy group, or an unsubstituted or alkyl-substituted amino group; and R represents a hydrogen atom, or an unsubstituted or substituted alkyl group.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 70 OF 70 USPATFULL on STN

ACCESSION NUMBER: 1998:75787 USPATFULL Full-text

TITLE: Process for producing polymer particles
INVENTOR(S): Koudate, Takashi, Wakayama, Japan
Hosokawa, Yasunori, Wakayama, Japan
Hanada, Yoko, Wakayama, Japan
PATENT ASSIGNEE(S): Kao Corporation, Tokyo, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5773542		19980630
APPLICATION INFO.:	US 1996-620302		19960322 (8)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1995-64420	19950323
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Schofer, Joseph L.	
ASSISTANT EXAMINER:	Sarofin, N.	
LEGAL REPRESENTATIVE:	Birch, Stewart, Kolesch & Birch, LLP	
NUMBER OF CLAIMS:	8	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	2 Drawing Figure(s); 1 Drawing Page(s)	
LINE COUNT:	1010	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 68 OF 70 USPATFULL on STN

ACCESSION NUMBER: 2000:128102 USPATFULL Full-text

TITLE: Magnetic carrier, two-component developer and image forming method
INVENTOR(S): Mikuriya, Yushi, Numazu, Japan
Okado, Kenji, Yokohama, Japan
Yoshizaki, Kazumi, Mishima, Japan
PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Tokyo, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6124067		20000926
APPLICATION INFO.:	US 1999-358409		19990722 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1998-206036	19980722
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	RoDee, Christopher D.	
LEGAL REPRESENTATIVE:	Fitzpatrick, Cella, Harper & Scinto	
NUMBER OF CLAIMS:	68	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	6 Drawing Figure(s); 6 Drawing Page(s)	
LINE COUNT:	3550	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A magnetic carrier constituting a two-component developer for use in an electrophotographic image forming method is formed of a carrier core comprising a first resin and magnetic fine particles dispersed in the first resin, and a second resin surface-coating the carrier core. (a) The magnetic carrier has a true specific gravity of 2.5-4.5, a magnetization σ .sub.1000 as measured in a magnetic field of $1000 \times (10 \text{ sup.} 3 / 4\pi) \text{ mT}$ (1000 oersted) of 15-60 Am.sup.2 /kg (emu/g), a residual magnetization σ .sub.r of 0.1-20 Am.sup.2 /kg (emu/g) and a resistivity of 5×10^{11} - 5×10^{15} ohm.cm. (b) The first resin has a polymer chain including a methylene unit (--CH₂.sub.2 --). (c) The second resin has at least a fluoro-alkyl unit, a methylene unit (--CH₂.sub.2 --) and an ester unit. (d) The carrier core is surface-coated with (i) a mixture of the second resin and a coupling agent having at least an amino group and a methylene unit, or (ii) a coupling agent having at least an amino group and a methylene unit, and then with the second resin.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L23 ANSWER 69 OF 70 USPATFULL on STN

ACCESSION NUMBER: 1998:143841 USPATFULL Full-text

TITLE: Liquid color developer for silver halide color photosensitive materials and processing method using the same
INVENTOR(S): Abe, Akira, Kanagawa, Japan
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Kanagawa, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5837435		19981117
APPLICATION INFO.:	US 1997-961275		19971030 (8)

AB A process for producing polymer particles comprising polymerizing a water-soluble polymerizable monomer in a system comprising a hydrophobic organic solvent inert to the polymerization and an aqueous solution of the water-soluble polymerizable monomer, the process being characterized in that the polymerization is carried out in the presence of, as a dispersant, an anionic surface active agent represented by formula (I): ##STR1## wherein R.sub.1 represents a straight-chain or branched alkyl, alkenyl or 2-hydroxyalkyl group having 5 to 25 carbon atoms; M.sub.1 and M.sub.2, which may be the same or different, each represent an alkali metal ion, an ammonium ion or a hydrogen atom; and n represents 1 or 2.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

>> d his full

(FILE 'HOME' ENTERED AT 07:35:34 ON 26 JAN 2006)

FILE 'REGISTRY' ENTERED AT 07:35:45 ON 26 JAN 2006

L1 14 SEA POLYETHYLENIMINE
L2 1 SEA TRANSITION METAL
L3 0 SEA L1 AND L2
L4 0 SEA IRON MANGANESE SILVER NICKEL COPPER GOLD
L5 1223 SEA IRON AND SILVER
L6 1 SEA TRANSITION AND METAL
L7 0 SEA L5 AND L1
L8 0 SEA L5 AND PEI
L9 0 SEA L5 AND POLYDENTATE
L10 0 SEA L5 AND POLYAMINE

FILE 'HCAPLUS, USPATFULL' ENTERED AT 07:38:06 ON 26 JAN 2006

L11 393019 SEA TRANSITION AND METAL
L12 21969 SEA POLYETHYLENIMINE OR PEI
L13 2850 SEA L11 AND L12
L14 11922 SEA L13 AND ODOR OR DEODORIZING OR DEODORIZING
L15 282 SEA L13 AND ODOR
L16 127 SEA L15 AND EPICHLOROHYDRIN
L17 126 DUP REM L16 (1 DUPLICATE REMOVED)
L18 1147 SEA L17 AND POLYDENTATE
L19 1 SEA L17 AND POLYDENTATE
L20 126 SEA L17 AND (METHOD OR PROCESS)
L21 71 SEA L20 AND CROSSLINKING
L22 70 SEA L21 AND (FABRIC OR PAPER OR CELLULOSE OR FIBER)
L23 70 DUP REM L22 (0 DUPLICATES REMOVED)
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SET NOTICE DISPLAY 1
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FILE 'CAPLUS' ENTERED AT 08:02:17 ON 26 JAN 2006

L24 1 SEA WO 2003-EP2183/PN,APPS

FILE 'INFADOC' ENTERED AT 08:02:19 ON 26 JAN 2006

FILE 'CAPLUS' ENTERED AT 08:02:21 ON 26 JAN 2006
L25 TRA L24 1- PN : 8 TERMS

FILE 'INPADOC' ENTERED AT 08:02:22 ON 26 JAN 2006
L26 8 SEA L25
L27 1 SEA L26 AND US/PC
SEL PN
L28 0 SEA L26 AND 2A/PC
L29 0 SEA L26 AND EP/PC AND EN/LA
L30 0 SEA L26 AND WO/PC AND EN/LA
L31 0 SEA L26 AND AU/PC
L32 1 SEA L26 AND CA/PC AND EN/LA
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D L23 11-70 IBIB ABS

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FILE HOME

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 24 JAN 2006 HIGHEST RN 872575-89-8
DICTIONARY FILE UPDATES: 24 JAN 2006 HIGHEST RN 872575-89-8

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TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

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* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
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B. SORTED BY DATE:

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>>> PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE

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CA SUBSCRIBER PRICE	0.00	-0.75

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FILE USPATFULL

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 24 Jan 2006 (20060124/PD)
FILE LAST UPDATED: 24 Jan 2006 (20060124/ED)
HIGHEST GRANTED PATENT NUMBER: US6990685
HIGHEST APPLICATION PUBLICATION NUMBER: US2006015978
CA INDEXING IS CURRENT THROUGH 24 Jan 2006 (20060124/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 24 Jan 2006 (20060124/PD)
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